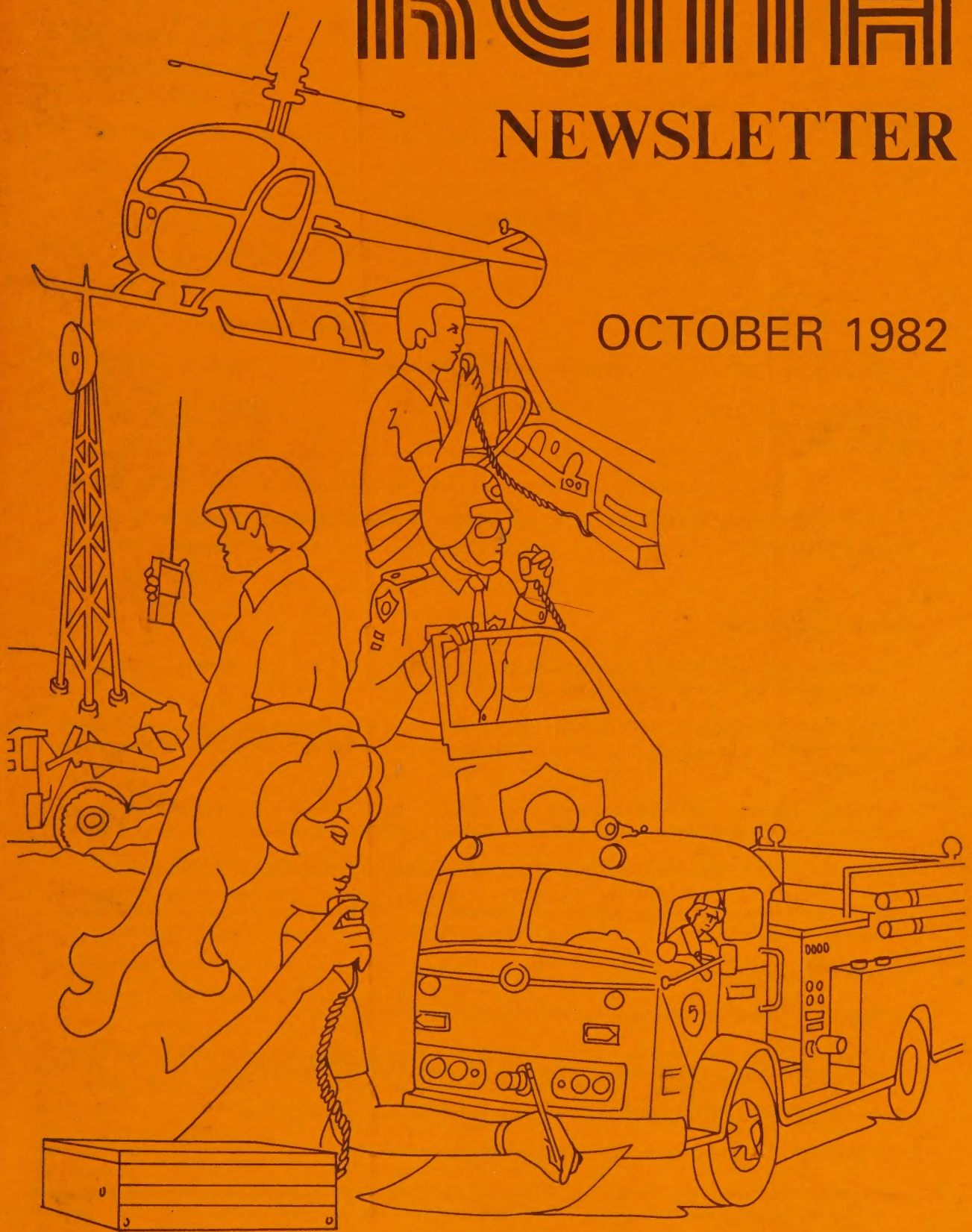
RCMA

NEWSLETTER

OCTOBER 1982



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OF MONITOR RADIO LISTENERS

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FOR YOUR INFORMATION:

1. All club business, unless otherwise noted, must be addressed to R.C.M.A., P.O. Box 4563, Anaheim, CA 92803. This includes matters that relate to renewals, changes of address, newsletter delivery problems, etc.

2. Input to the RCMA Newsletter must be mailed to the proper editors, whose addresses are included in the individual column headlines. If no particular column seems appropriate, send input to RCMA, 1 West Potomac, Williamsport, MD 21795.

3. To forward a letter to a specific RCMA member whose address you do not know, put your message to that person in a stamped envelope with your return address on it; mail to RCMA, P.O. Box 408, Earp, CA 92242.

4. Please include your RCMA membership number with all correspondence to newsletter editors or club headquarters.

5. If you require a reply when writing to RCMA headquarters or to one of the editors, you MUST enclose a self-addressed, stamped envelope.

6. Please write on only one side of the paper.

7. Please don't combine in one letter several items that should go to different addresses.

8. If you want to type what you submit to the newsletter, please don't exceed a seven-inch column width and please single space. Doing this may save an editor from having to retype the material. Please don't use script type.

9. Your RCMA membership number and expiration date appear on your newsletter mailing label.

10. You may join or renew your membership for ONLY one year at a time.

11. The RCMA Newsletter accepts paid advertising. If you would like to place a paid ad, please write to the following address for our advertising guidelines: RCMA Newsletter, P.O. Box 13602, St. Louis, MO 63138

RCMA NEWSLETTER

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** Calendar **

Send notices of upcoming events for the Calendar section to:
John Clark, RCMA, P.O. Box 4563, Anaheim, CA 92803.
Please send notices well in advance of the Newsletter deadline.

Greater L.A. Area R.C.M.A. Eric Christenson CALA045 Presiding
--Meetings tentatively scheduled each third Friday of the month--

September 17 FRIDAY Meeting at Mercury Savings and Loan, Valley View and Lincoln, Buena Park, Ca 8:00PM. 2nd Floor. Elevator in back.

general topic not determined as of press time

October 16 SATURDAY 10 A.M. Tour
U.S. Forest Service South Zone
CDF Region 6 Headquarters, 2524 Mulberry, Riverside Calif
(located about 1/2 mile from junction of 91 and 60 freeways
Thomas Broths Riverside map page 7 E3 off ramp hard to see but
the talk in are frequencies 145.46, 223.76, or 449.875)

November 19 FRIDAY 7 P.M. Tour
LAX Control Tower Los Angeles International Airport
Cameras and/or Video allowed but NO Flash equipment

December 17 FRIDAY Meeting at Mercury Savings and Loan, Valley View and Lincoln, Buena Park, Ca 8:00PM. 2nd Floor. Elevator in back.

January 21 FRIDAY 8 P.M. Tour
NET 6 Fire Communications Center Huntington Beach

R.C.M.A. Chicago

Contact Edward Robert Sirovy IL-004 312 969 2856
311 S. Williams Street, Westmont, Il 60559

Meetings: NANCINI'S Resturant 5555 St Charles Road, Berkeley, Il
two blocks east of St Charles Road exit from Eisenhouer
Expressway Extention I-290 (phone 312 544 7277)

September 25 1982 Saturday 1:00 PM
November 13 1982 Saturday 1:00 PM

A SASE on file assures notification of tours and other item which may be scheduled on short notice.

R.C.M.A. Connecticut Chapter

Contact Bill Moore CT 038 203-223-0840
950 Farmington Ave, New Britain, CT 06051

R.C.M.A. Dallas-Fort Worth

Contact Mike Pruden TX 072 metro 461 2602
Larry Van Horn TN 017 642 8407
David Coursey TX 107

Regular bi-monthly meetings are scheduled the second Saturday of each odd month Tenative location
Stoneridge Homeowner's Association Clubhouse
500 Grants Parkway, Arlington, Tx (SW of Arkansas and Collins)

Sept 11, 1982 7:00 PM
Nov 14, 1982 7:00 PM

For latest information and newsletter send a stack of SASEs to
Scanning Dallas/FortWorth
1111 N. Carrier Parkway #B-107
Grand Prarie, Tx 75050

THOUGHT waves

Ginny Slick, RCMA Assistant Editor, 1 West Potomic, Williamsport, MD 21795

Since I can't keep my "thought waves" from wandering off in the direction of the first vacation lasting longer than a weekend that I've ever had, I'm going to keep this column short for a change. It will come as no surprise to you that the subject will be our newsletter.

I'd like to suggest that this month you read one column that you've never read before. Last month I actually read the club news that appears at the beginning of the newsletter and finished with a promise to read it from now on. Wouldn't it be nice if we could buy tapes of the meetings? I'm sure that the most interesting things are discussed before or after the speaker appears! Of course the person doing the taping (is he called the "tapist"?) would have to sit in the middle of the audience and capture all that is said to really give us the true flavor of one of these affairs!

Going back over your old newsletters can be valuable, too. I have only recently begun to develop an interest in space communications. The newsletter has had a sattelite column for many years now, and reading the columns is like taking a course in the topic. We've had exceptionally well versed people writing this column. Each time I go back and read one I find something I missed or had forgotten. Not having a computer like some of you lucky devils out there, I have to write topics I'm sure that I'll need on the front cover. Needless to say that year by year the covers are getting more obscured by my scrawlings.

Are we giving you the information that you're most interested in? Is there something that we don't cover that you'd like us to write on? The club is dedicated to the goals of providing a fraternity (and/or sorority) for those of us who seriously pursue this hobby. The column, Your Thoughts, is a vehicle for you to use to put forth your desires, your thoughts, your suggestions to help us meet your expectations of us. I sure hope you'll use it. I've had only two letters since I've begun to compile this column! Don't be one of the silent majority. Would you believe that I've had more offers to edit columns than letters to the editor? Tell us what you like and don't like. We need input to find out where the bulk of the club stands on certain issues. This is your chance to tell us what's botherin' you, Bunky. Please, pick up your pen and drop me a line.

That's about all this Maine-bound mind can deliver for this month. I'm gonna pack my 250 and start searchin' my way north. To all of you who are doing the same thing and to all of you who can't I wish you happy hunting!!!

Ginny

ASSOCIATION OF NORTH AMERICAN RADIO CLUBS

NEWS HIGHLIGHTS

ANARC is a federation of the most responsible, well established radio listening clubs in North America. RCMA attained Full Member status in ANARC in 1977. For a list of the ANARC Member and Associate Member clubs send a self-addressed, stamped business size envelope with your request to the address below.

For an annual subscription to the ANARC Newsletter, send $5 to:
Joe Barr, 1500 Bunbury Drive, Whittier, CA 90601. ($8 overseas subscription.)

ANARC-82

by Robert Horvitz (CT-048)

At least half the pleasure of attending the ANARC-82 convention last July 23-25 was driving there from Providence, through the wooded hills of western Massachusetts and Vermont, and the flat farmland of Quebec Province, to the great city of Montreal. Radio Canada International hosted the convention; most events occurred in the beautiful new Maison de Radio-Canada skyscraper, and Ian McFarland, host of RCI's "Shortwave Listeners Digest" program, did a superb job organizing the whole affair.

Over 170 people attended ANARC-82, most from North America, some from as far away as New Zealand, India, Turkey and even Senegal (the director of state radio/television, no less).

I arrived around 7 PM on Friday, just in time for RCI's wine-and-cheese reception, but too late to attend the meeting of club representatives (sorry about that, but no one had told me it was scheduled earlier in the day). I set out a small table-display of RCMA Newsletters and membership applications amid the hubbub. The reception hall was crowded not only with people, but with equipment (on loan from Glenwood Trading Co., Ltd., and Sony), graphic panels representing the BBC, RCI, Mitel Corp., Canadian satellite and videotext technology, and literature from some international broadcasters and ANARC clubs.

Friday night was a get-acquainted social gathering; the schedule of formal presentations began at 9 AM Saturday with a brief opening ceremony, followed by a fascinating lecture/video-showing by astronomer David Meisel about current solar activity. It seems the sun has been acting strangely lately, with one entire hemisphere very quiet, the other very active, so as it rotates, the Earth is exposed to two different kinds of efflux, alternately. Most people think of solar flares as the main disruptor of ionospheric radio propagation, but according to Meisel, the solar wind emerging through coronal "holes" over quiet areas of the sun can precipitate magnetic storms in the ionosphere (though the link between solar activity and ionospheric activity is still not well understood). Another weird feature of current solar activity is that although the total number of sunspots is gradually dropping, after the cyclical peak 3 years ago, the solar flux is still increasing--breaking the previously-observed pattern of flux and spot number increasing and decreasing together in a specific ratio. Meisel said this "has led to some very bizarre propagation conditions". Most everyone at the convention knew exactly what he meant!

Meisel edits Mail-a-Prop, a propagation forecasting service that covers HF and VHF (low-band skip). Issued every 3 weeks, it gives daily computer-derived predictions of sun/ionosphere conditions for the next 4 weeks, as well as "exclusive and newsworthy items concerning radio propagation, solar activity, progress of the sunspot cycle, schedules of meteor showers, etc." For a free sample, send a legal-size SASE with your request to: D. D. Meisel, 54 Westview Crescent, Geneseo, NY 14454. (A 4-issue trial subscription costs $8.)

After a short coffee break, discussion resumed with Don Fraser of the Canadian Dept. of Communication, and George Jackson, HF engineer at CBC headquarters. They discussed Canadian preparations for the HF Broadcasting WARC in 1984. Jackson described a clever approach to band-planning they've devised, to rationalize frequency assignments, reduce interference and lower transmission power--very utopian--and persuasive. But privately, Jackson admitted that politics will make acceptance of any planning approach extremely difficult.

Lunch followed, and then Adrian Peterson, Director of Adventist World Radio in Poona, India, gave a DX travelogue through Asia, with slides of stations and settings, supported by an audio-tape of station IDs, ISs and program samples.

Betty Zimmerman, Director of RCI and Canadian delegate to the MacBride Commission (UNESCO), spoke on the "New International Information Order".

Jonathan Marks (Radio Netherlands), Adrian Peterson, Margaret Howard (BBC), Bob Zanotti (Swiss Radio International), Ian McFarland, Dan Robinson (VOA), and a fellow from HCJB whose name I didn't catch, made up the International Broadcasts Forum. They answered questions and bantered among themselves for about 45 minutes, then everyone adjourned to the nearby Holiday Inn (where most of us out-of-towners were staying) for a cash-bar cocktail hour. (I went swimming in the hotel's micro-pool instead.)

The Awards Banquet followed. The featured speaker, Margaret Howard, accepted an armful of awards for the BBC--including her own 4th-place finish in the Review of International Broadcasting's "Favorite Broadcaster of 1982" poll. Our host Ian McFarland garnered 1st-place in that poll, and collected another 1st-place when "SWL Digest" won as the RIB readership's "Favorite Program". Margaret Howard spoke about the BBC, with andecdotes mainly drawn from her experience as presenter of the "Letterbox" program. Her wit and polish were appreciated by all.

Sunday started off with the ANARC annual general meeting. A few committee reports were given. Steve Webster of the Ontario DX Association presented his case for holding the 1983 ANARC convention in the Toronto suburb of Scarborough; then Ken Mason, Jr., of the Washington DX Association presented the case for Washington, DC. (A non-binding ballot among the club representatives later showed a strong preference for Washington.) John Kapinos, the new head of HAP-USA, made a strong appeal for upgrading HAP to full member status in ANARC, saying its recent organizational troubles are over. The International DXers Club of San Diego is also trying for full member status, though no one from the club spoke in its behalf. Lanni Pettit proposed that the Association of Clandestine Enthusiasts (PO Box 452, Moorhead, MN 56560; 25¢ for info and a sample of the monthly newsletter)be granted ANARC associate status. No decision was made on any of these questions, as ballots would be mailed out to all the club representatives later. Michael Murphy, representing the European DX Council, invited everyone to attend the 1983 EDXC convention in London next May 20-23. Someone proposed that ANARC select someone to try to attain official observor status at the HF Broadcasting WARC in 1984, and this position was added to the ballot club representatives were to receive by September. I proposed that a committee be formed to monitor the progress of the Over-the-Horizon Backscatter Radar system, handle complaints of interference and, if appropriate, suggest ways of reducing interference. Dave Browne said that that, too, would appear on the representatives' ballots.

A few months before the 1982 convention, Dave Browne announced that after 8 years as Executive Secretary he'd like to step down. He affirmed this again at the annual meeting, saying, "It's time for new blood". But no one volunteered--or even was volunteered--for the job, leaving it uncertain if he would carry on, or if this position would also appear on the representatives' ballot.

After a short break, the annual auction of decals, pennants, bumperstickers, and other trinkets was held to benefit HAP. Several receivers were sold as well. When everything was totalled up, HAP had raised over $2000--a record, surprising even John Kapinos, who later told Bob Zanotti that most of the cash would be held in the bank until he could rework the budget to make effective use of this amount.

The auction brought the main part of the convention to a close, and many of us

rushed back to the Holiday Inn to check out before another day's charges could be added to our bills. However, there were two potentially-interesting events scheduled for Monday: a bus trip to the RCI shortwave monitoring station in Ottawa, and a "working lunch" at which Kim Eliot, who teaches communications at the University of Massachusetts, would discuss 2 of his recent papers with some of the international broadcasters and a limited number of invited others. I missed both of these extras, as I had to leave for a visit to my grandmother in Akron, Ohio (no, she's not Robert Leary!). The drive, via the Thousand Lakes region of northern New York and the lush, dense forests of northwestern Pennsylvania (I took only back roads), was even more spectacular than the drive up to Montreal.

Looking back on the convention, I'm struck by how odd it is that the RCMA belongs to ANARC at all. Shortwave DXers still set the tone of the organization, and although ANARC-82 was very well conceived and almost perfectly executed, it focussed quite narrowly on shortwave broadcasting. People mainly interested in VHF-UHF monitoring would have found very little to pique that interest at the convention. In fact, only 3 RCMA members attended--Harold Dye (MI-052), myself, and someone else (identity unknown)--even though RCMA is now the largest of all the ANARC clubs!

Jerry Short, chairman of our Mailing Committee, says that being on the ANARC club list does bring in new members; obviously it doesn't do any harm. But I think it is important to consider ways in which we might have our interests better reflected in the activities of ANARC (for instance, their Equipment Information Committee might expand their files on scanners--I'd planned to propose that to Harold Sellers, but as his wife was expecting their first child at any moment, he didn't attend).

ANARC could use some new energy--new ideas, new people--although it wasn't clear that the people who attended this year's convention really want new ideas, energy or people. The convention's inability to find anyone to succeed Dave Browne as Executive Secretary spoke volumes. The failure of new leadership to emerge at ANARC-82 makes the future of the organization a bit uncertain--though I have no doubt that there will be an ANARC-83, and the effort put out by the local sponsoring group will give the association the appearance of good health--at least for the duration of the convention.

Business, Etc.

This column is for reporting frequency and radio system information for the following varied services: business, forest products, petroleum industry, special industrial, manufactureers, news media (behind-the-scenes radio, TV & newspaper), motion picture industry, security (private patrol, detective agencies, campus security & police, amusement park & stadium security, shopping center & mall security, plant/business/hotel security, etc.), General Mobile Radio Service (GMRS), mobile phone/RCC & paging, trucking firms, bus lines, taxi cabs, tow trucks, utility companies (private & municipal water, power, electric, gas, telephone, etc.), and all school & college related frequencies. Send information and questions pertaining to the radio services covered in this column to:

Larry Smith, 1223 Vinsetta Blvd., Royal Oak, MI 48067.

HELLO ALL!! WELCOME TO ANOTHER MONTH OF "BUSINESS AND ETC." THANKS TO ALL WHO HAVE WRITTEN IN TO SHARE WITH US YOUR FINDINGS AS WE ALL APPRECIATE IT.

THIS MONTH WE HAVE SOME INTERESTING SERVICES LIKE POWER COMPANIES; BROADCASTING STATIONS; RADIO COMMON CARRIER [R.C.C.]; TAXI COMPANIES AND A MIXTURE OF BUSINESSES. A GOOD STACK OF INFORMATION IS TO FOLLOW TO LET'S GET ON WITH IT:

MIKE [AR-???] FROM BENTONVILLE, ARK. SENDS THE FOLLOWING...

BROADCASTING:

461.125	BIG CHIEF & LITTLE CHIEF OF FAYETTEVILLE
161,730	KURM [A.M. RADIO] REMOTE BROADCAST
485.000	KTVJ [T.V.] MID AMERICA BROADCASTING [JOPLIN, MO]

R.C.C. MOBILE TELEPHONE:

152.030	CH. 1	RADIO COMMON CARRIER
152.060	CH. 3	RADIO COMMON CARRIER
152.180	CH. 11	RADIO COMMON CARRIER

[Ed. Note: NO COMPANY NAME WAS FOUND ON MICROFICHE]

TAXICABS:

30.960	KIB-808	BENTONVILLE TAXIE [SIMPLEX]
152.390/157.650		ROGERS
152.450/157.710		SPRINGDALE
152.270/157.530		FAYETTEVILLE

BUSINESS:

151.835	WALMART TRUCKING [BENTONVILLE]
463.400	FAYETTEVILLE COMMUNITY REPEATER
464.150	VILLAGE HOMES [BELLA VISTA]
33.180/37.480	ARKANSAS WESTERN GAS
151.565	TRI STATE READY MIX
158.385	BEAVER LAKE CONCRETE
158.190	CARROLL ELECTRIC CO-OP.
460.975	CENTRAL ALARM COMPANY
43.100	ARKHOLA READY MIX
153.665	BEAVER WATER DISTRICT
463.450	WARNER CABLE
46.040	GARY FRANCE, DVM
151.715	TX COMMUNITY ANTENNA
154.515	ROGERS SAND AND GRAVEL

THANKS MIKE FOR A VARIETY OF SERVICES. I DIDN'T SEE YOUR CLUB NUMBER UNTIL I GOT TO THE END OF YOUR LIST, IT IS MIKE [AR-013] FOLKS!!

CHUCK [IL-141] SENT AN INTERESTING LIST OF WHAT HE THINKS ARE POWER COMPANY[IES] AND BUSINESSES IN THE SOUTHERN ILLINOIS AREA.

461.800	VOICE INVERSION SCRAMBLING. BOTH BASE & MOBILES ARE SCRAMBLED AND NO CALL SIGNS HAS EVER BEEN HERRD. PROBABLY A POWER PLANT LIKE JOPPA, IL OR SOME OTHER ELECTRICAL POWER ORIENTED INDUSTRY OR CONSTRUCTION COMPANY. USED FOR BUYING SUPPLIES AND CAN BE HEARD ALL OVER LOWER SOUTHERN ILL.
464.325	NORAGE [FEDDERS] HERRIN , IL [MAINTENANCE CHANNEL]
469.050	E. BLANKENSHIP COMPANY, MARION, IL [MAINTY CHANNEL] FOR BASE TO BASE TRAFFIC. THERE IS NO REPEATER.
154.540	CREAL SPRINGS NURSING HOME [KYZ-856] USED FOR CONTACTING LORETTA PHARMACY AND LORETTA NURSING HOME [KLF-358], SHAWNEETOWN, IL. AMBULANCES ALSO HAVE THIS FREQUENCY.
154.540	MARSHALL BROWNING HOSPITAL [KUN-646], DU QUOIN, IL. VOICE PAGING.
154.540	SECURITY GUARDS. OLIN CO., ORDILL AREA [ILLINOIS ORDNANCE AREA], LOCATED INSIDE THE CRAB ORCHARD NATIONAL WILDLIFE REFUGE. THERE ARE SEVERAL OLIN PLANTS IN THE REFUGE, BUT THE E.P.A. MADE OLIN MOVE THE ORDNANCE TESTING RANGE INTO STRIP PITS NORTH OF THE REFUGE.
173.39625	DEVILS KITCHEN LAKE, CRAB ORCHARD NATIONAL WILD-LIFE REFUGE. HYDROMETRIC METERING. [Ed Note: NO VOICE SHOULD BE HEARD HERE, JUST TONES AND SIGNALS]

151.715	TROJAN POWDER [WXM-514], TROJAN CORP. IS ANOTHER COMPANY LOCATED IN THE CRAB ORCHARD NATIONAL WILD-LIFE REFUGE. THE TROJAN CORP. IS SEEKING ILL. E.P.A. PERMISSION TO BURN MORE THAN A MILLION POUNDS OF EXPLOSIVE-CONTAMINATED WASTES AND BUILDINGS ON THE BORDER OF THE SHAWNEE NATIONAL FOREST IN UNION COUNTY, NEAR WOLF LAKE.
153.515	REND LAKE WATER DISTRICT.
151.830	LAKE OF EGYPT WATER & SEWER DISTRICT.
154.4785	LAKE OF EGYPT WATER & SEWER DISTRICT REMOTE AUTOMATIC METERING DEVICES. THEY USE ASCI DIGITAL CODE. THERE ARE 10 UNITS OPERATING WITH MORE ON THE WAY. "I'M GLAD I DON'T LIVE NEXT TO ONE OF THESE NOISE MAKERS"!!

I MUST SAY CHUCK THIS IS ONE REFRESHINGLY DIFFERENT LOOK INTO SOME SERVICES NOT MANY OF US SPEND MUCH TIME WITH. HOPEFULLY, OTHERS WILL GIVE UNUSUAL THINGS LIKE THIS A TRY, THANKS TO YOUR INTRODUCTION, AND WILL BE LOOKING FOR MORE DIFFERENT MATERIAL FROM YOU IN THE FUTURE. KEEP UP THE GOOD AND HARD WORK!!

SCOTT [FL-033] SENT IN A FEW LISTINGS FROM THE SOUTHERN FLORIDA REGION, WHICH HE FINDS OF INTEREST AND WANTS TO SHARE THIS WITH US:

466.580	KNAY-672	MARILL SECURITY SERVICES, INC. [FT. LAUDERDALE] MOBILES
461.550	KNAY-672	SAME -- BASE
467.800	KN-2640	WACKENHUT SECURITY,
465.925	WAJ-748	WACKENHUT SECURITY [F - 1]
460.925	KGJ-317	WACKENHUT SECURITY [F - 2]

[Ed. Note: ALSO TRY 472.2875 [KXW-334], 475.2875 [WAX-293] OUT OF MIAMI.

WILL BE LOOKING FOR MORE MATERIAL FROM YOU SCOTT WHEN YOU FIND THE TIME BETWEEN YOUR STUDIES AT SCHOOL. WITH THIS MOST INTERESTING LIST FOR THIS MONTH, IT'S TIME WE COME TO THE END. KEEP IN TOUCH EVERYONE, LETTING ALL OF US KNOW WHAT IS GOING ON IN YOUR PARTS OF THE COUNTRY.

LARRY [MI-001]

CANADA

Send Canadian frequency information, radio system details and other information relating to Canadian monitor radio listening and questions to:
Robert Berezowski, 5832 Dalhousie Drive NW, Calgary, Alberta T3A 1T1 Canada.

Welcome to this month's Canada column. I almost missed this month's deadline. It is incredible how fast the time is slipping away. It only seems like yesterday that I finished my last final. Now it is almost time to return. (Actually there is a month to go, but the end is too near for me) The weather here has been great the last few weeks, and I have only burned a few pizzas. I have received a fair amount of material in the mail, so here goes.

For the bookworms in all of us, I would like to point out a couple of publications of interest. In the July/August issue of

Monitoring Times (from Grove Enterprises) there is a good list of frequencies for the Toronto area. The list appears to be quite comprehensive. If you do not have this issue, you might be able to get back issues from Grove Enterprises.

The other publication I would like to refer to is for those in the Vancouver area. On page A12 of the Vancouver Sun for Nov. 14, 1981 is a map showing the breakdown of Vancouver into districts used by the Vancouver Police. Myron (CAN-057) has also supplied the following frequencies that supplements the chart.

Ch.1	143.085	Areas 1 & 2
2	143.385	Areas 3 & 4
3	143.565	Areas 5 & 6
4	143.685	Areas 7 & 8
5	143.025	City-Wide Car to Car
6	143.775	Detectives
	143.055	MDRS (Mobile CPIC, Data only)
	143.595	MDRS

Now we move back to Ontario. From two members I have received more information on the new OPP radio system. First item comes from Chris (CAN-061). He has passed on an article that appeared in the OPP Review. The article examines the communications centers or Com-Centres. The Com-Centres will more closely resemble a computer room than a radio room. Each centre will have five to six consoles, each capable of controlling all radio functions and a computer keyboard with a CRT. All of the calls will be voiced over the air, but a computer-aided dispatch system will be used. Shared between two consoles will be a CPIC terminal and a set of district maps reduced onto micro-fiche. Overall the new centres will greatly streamline dispatch operations.

The second item comes from Guy (CAN-031). In a letter dated June 26, (82 of course) he has supplied a list of new OPP frequencies for the Essex, Chatham and Hamilton area. Guy does not know if these frequencies are in use yet. Perhaps some members in Ontario can check these channels out. Guy has also heard that the installation and use of the new system is about a year behind schedule. Now, without further delay:

142.275/138.255	Essex, Chatham
142.365/138.345	" " West McGillivray
142.575/138.555	" "
142.665/138.645	" " West McGillivray
142.770/138.750	" " " " Fonthill, Ancaster, London, Simcoe, West Lorne, Woodstock, Wyoming, Aylmer
143.160/139.140	London
143.295/139.470	Simcoe, Wyoming, Fonthill
143.310/139.440	London, Wawa
140.970	Ancaster, Aylmer, Chatham, Essex, Fonthill, London, West Lorne, Woodstock, Wyoming, Simcoe, West McGillivray
141.195/139.185	Simcoe, Wyoming, Fonthill
141.300/139.410	" " Ancaster
141.360/139.170	Ancaster
141.420/139.215	West Lorne
141.435/139.155	Chatham, Fonthill
141.450/139.200	Woodstock
141.495/139.290	West McGillivray
141.510/139.425	Chatham, Fonthill
141.540/139.305	Woodstock
141.555/139.320	Aylmer
141.630/139.260	Ancaster
141.675/139.350	Aylmer
141.690/139.455	Chatham, Fonthill

141.705/139.380	West McGillivray
141.720/139.395	West Lorne
142.665/138.365	West McGillivray

Well I am sure that we are all greatly indebted to Guy for supplying that long list of OPP frequencies. As I said before, Guy does not know if these channels are in use yet. I would really appreciate it if members in Ontario would check these frequencies and let me know when they become active. I would expect that there would be a period of testing and evaluation before the patrol cars switch over to the new system. Any more information I receive will of course be passed on.

Harry (CAN-074) has passed on a few corrections to the March 82 Canada column. The Blood Band Tribal Police in Hobema operate on 153.995(R)/157.695. The Red Deer Fire Dept. are on 154.370/154.370, and the Lethbridge Police Dept. are now on UHF 413.0875(R), 413.1625(R) 413.2625(R), and 413.6375(R). The Medicine Hat Police operate on 155.940(R), 154.770(R), 155.010(R), and 154.400. Harry has also sent along a few frequencies of interest:

Quebec Nordiques	418.575(S)	
Edmonton Oilers	458.3625(S)	
Toronto Bluejays	151.085(S)	
National Sport and Recreation Center	411.3875/418.050	
Edmonton Remand Center	451.2375(R)/456.2375	Inner
	453.2625(S)	Secondary
	158.940 (S)	Outer, Vans for Prisoner Transport
Fort Saskatchewan Correctional Institute	452.8625(R)/457.8625	
	453.4625(S)	

To add to this list, Doug(CAN-041) and myself have found the jails in the Calgary area operate on the following frequencies:

Calgary Remand Center	452.8625(R)/457.8625	Security
	452.0625(R)/457.0625	
Calgary Correctional Institute (Spy Hill Jail)		
	452.9625(R)/457.9625	Security
	453.4625(S)	Maintenance

I also received a letter from Tom(CAN-084). I must apologize to Tom for not printing his letter sooner: Sorry Tom, my filing system has something to be desired. Anyway, Tom is a new member of RCMA, but he is not a new comer to our hobby. He has sent a frequency list and information on the London area. Some of his list has already appeared in the newsletter, therefore I have omitted these parts.

London Police Force	Inner City	142.035
	Suburbs	142.305
	CID and CPIC	142.880
	Inter-department	142.770
St. Thomas Police		153.800
Strathroy Police		142.335
Forest Police Force		154.620
Waterloo Regional Police		142.185
		142.815
		142.620
Kitchener Police		152.915
		151.010
Sarnia Police		142.245
London Fire Dept.		154.650
		154.950
Middlesex County Fire (Mutual Aid)		154.370
Strathroy Fire Dept		153.980
	County	154.370

Fire Dept. Common		154.070
Fire Marshall		154.190
Thames Valley Ambulance		149.410
Ministry of Transport and Communications	Middlesex Cty	168.240
	Lambton Cty	163.995
Middlesex County Roads Dept.		169.800
Lambton County Roads Dept.		169.620
Caradoc Twp. Roads		169.080
Adelaide Twp. Roads		169.215
London PUC		169.350
Strathroy PUC		169.110
Bell Telephone Mobile Phones	London	152.630
	London	152.810
	Forest	152.590
	Aircraft	454.975
University of Western Ontario	Security	170.310
CFPL TV	London	172.680
Union Gas	London	163.560
Langs Buses	Strathroy	167.070
London Security Co.		155.310
REACT London		172.530
Airtel Ltd.	London Airport	164.430
Ontario Vets		163.080
	Strathroy	170.565
SiS Security	London	163.740

Thanks for the list Tom and I hope that you will enjoy your membership with RCMA. To finish off this month's column, I will include a contribution from Bruce (CAN-019) on the subject of Ont. Min. of Health Ambulance communications. Untill next month, best wishes and happy monitoring.

ONTARIO HOSPITAL AMBULANCE SERVICE

AREA COMMUNICATIONS FREQUENCIES

148.165* R Metro Toronto Ch 4 - South East Dispatch

148.360 Metro Toronto Ch 7 - Administration

149.170

Belleville	Burlington	Barrie
Halton	Hamilton	Milton
Mississauga	Oakville	Ottawa
Owen Sound	Pembroke	St. Catherines
Simcoe Rescue Squad (Barrie)		Niagara

149.410 Metro Toronto Ch 5 - Tactical
Brampton Tactical
Windsor
London

149.440*

Haliburton/Minden Pagers*	Barrie Tactical
Mindemoya Pagers (Manitoulan Island)	
Ottawa Administration	Peterborough Ch 2
Oshawa Tactical	Windsor Administration

149.470* Oshawa* Peel Region/Brampton
York Region Windsor Dispatch Ch 4

149.605 Hamilton Pembroke
Sault Ste. Marie

149.620 Oshawa Telemetery

149.695 Oshawa Telemetery

149.830 York Ambulance Control

150.100* O.H.A.S. Provincial Common
Metro Toronto Ch 6

150.485	Sault Ste. Marie District
150.530* R	Metro Toronto Ch 3 - South West Dispatch
150.695	Hamilton
151.820* R	Metro Toronto Ch 2 - North East Dispatch
152.375* R	Metro Toronto Ch 1 - North West Dispatch
154.310	Woodstock (Fire Dept.)
154.540* R	Renfrew Area Dispatch* Georgian Dispatch (Barrie)
155.190* R	Oshawa (149.470 In) York
156.195	Metro Toronto Ch 8
411.2875*R	Oshawa
413.7625/413.8125/413.8375/413.8625/413.8875	Sarnia Telemetery
414.3875 R	Repeats 150.100
414.4125 R	London
418.6875*	Helicopter Ambulance Unit 799 (Bandage One) Air to York Control
129.275*	Air Ambulance Service Emergency Channel
NOTE:	Ambulances operating outside their home base areas are required to communicate on the O.H.A.S. Provincial Common Channel - 150.100 (03/82)

COMMUNICATIONS PROFILE

RCMA Asst. Editor, 1 West Potomac, Williamsport, MD 21795

This column is for special projects that explain various radio systems in detail. Frequencies and radio codes of not only municipal agencies and certain federal government agencies may be listed, but also large businesses and corporations. The contribution must be lengthy enough that publishing it in one of the regular columns would not be possible. If you are inclined to submit a report as the one below appears, please follow No. 8 in the inside front cover of the Newsletter.

THE SPACE SHUTTLE COMMUNICATION SYSTEM

by Larry Van Horn (TN-014)
RCMA SPACE COMMUNICATIONS
EDITOR

In honor of the forth coming mission number five for the Space Shuttle Columbia inaugrating operational service of the STS (Space Transportation System) program, the RCMA is featuring a Communication Profile on the STS communication system. This profile will better acquaint the monitor enthusiast with not only the Shuttle operational frequencies but, the actual on board system being used by the Colombia and the Challenger shuttles.

SHUTTLE COMMUNICATIONS SYSTEM

The S-band system is the primary means of communications between the orbiter and the ground tracking stations during the ascent, orbital, and entry phases of the flight.

There is one uplink from the ground tracking stations to the orbiter, which is phase-modulated (PM) and provides commands, voice, and a coherent ranging signal to the orbiter.

There are three downlinks from the orbiter to the ground tracking stations. One is PM and provides voice, telemetry, two-way doppler, and a coherent ranging signal. The other two are frequency modulated (FM) because they are used for transmission of wideband data. One FM downlink provides operational real-time Space Shuttle main engine data during ascent, real-time video (television), or operations recorder dump data. The remaining FM downlink provides real-time development flight instrumentation (DFI) data.

In addition to S-band, the orbiter has an ultra-high frequency (UHF) communication system which is used only for air-to-air and air-to-ground voice communications and a Ku-band communications system, which will be used in conjunction with the Tracking and Data Relay Satellite (TDRS) system in later flights. The UHF is used after reentry during the approach and landing phase of the flight. The air-to-ground voice communication takes place between the orbiter and the landing site control tower and the orbiter and chase aircraft which assist the orbiter flight crew in landing the orbiter and the air-to-air voice communication takes place between the orbiter and extravehicular activities (EVA's). In the prelaunch phase, the orbiter flight crew utilizes the launch umbilical for communications with the ground support and operations personnel until the moment of liftoff.

S-BAND SYSTEM. The S-band operates in the S-band portion of the radio frequency spectrum of 1700 to 2300 MHz.

The uplink from the ground tracking stations will be phase-modulated on a center carrier frequency of either 2106.4 MHz. (primary), or 2041.9 MHz. (secondary) for the NASA Space Tracking and Data Acquisition Network (STDN) ground stations and 1831.8 MHz. (primary) or 1775.7 MHz. (secondary) for the Department of Defense (DOD) (Air Force Satellite Control Facility-SCF) ground stations.

The orbiter can transmit a PM downlink and two FM downlinks simultaneously. The PM downlink will be on a center frequency of 2287.5 MHz. (primary) or 2217.5 MHz. (secondary) for the SCF ground stations and 2287.5 MHz. (primary) or 2217.5 MHz. secondary for the NASA STDN ground tracking stations. The FM downlink are on a center carrier frequency of 2250.0 MHz(FM operational transmitter) and 2205.0 MHz(DFI transmitter).

The PM uplink provides for commanding and voice transmissions from the ground stations to the orbiter. The PM downlink provides for telemetry and voice transmissions from the orbiter to ground stations.

The S-band system is the only system for command reception until the Ku-band system is installed in the summer of 1983. The Ku-band system will beused in conjunction with the TDRS. All MCC-H (Mission Control Center- Houston) uplink commands are multiplexed with digital voice and transmitted on the S-band PM uplink. The S-bands system removes the voice and transfers commands to the onboard orbiters computers. The computers route the commands to the intended systems.

The S-band PM uplink originates from an STDN remote station, NASA or at an DOD SCF remote station. Each type of remote station has a choice of two uplink frequencies for data transfer. The frequency selection is under MCC-H control. The S-band uplink transfers the high-data rate of two voice channels and commands (72 kbps kilo bits per second) or low data rate of one voice channel and commands (32 kbps), two-way doppler, and two-way tone ranging.

The S-band PM downlink can originate from two S-band transponders aboard the orbiter. Each transponder can downlink on a frequency of 2217.5 MHz or 2287.5 MHz, but not both at the same time. The S-band PM downlink transfer high-data-rate telemetry plus two voice channels (192 kbps) or low-data-rate telemetry plus one voice cahnnel (96 kbps) and two-way doppler, and two-way ranging.

The S-band FM downlink can orginate from three FM transmitters on board the orbiter. Two are tuned to 2250.0 MHz and one is tuned to 2205.0 MHz. The S-band FM downlinks transfer real-time engine data or television or operational instrumentation PCM (128 kbps) or playback of engine data or recorded high-rate data (192 kbps) and DFI (128 kbps).

Having two S-band uplink and downlink frequencies prevents interference when two Space Shuttle orbiters are operating at the same time. One Space Shuttle orbiter could select the high set of frequencies and the other could select the low set of frequencies.

The two identical S-band transponders receive and transmit the PM uplink signal and downlink signal. Only one transponder operates at a time; the other transponder is a redundant backup. The selected transponder transfers the uplink commands and voice to the NSP (network signal processor), receives the downlink telemetry and voice from the NSP, retransmits on a coherent frequency for the two-way doppler, and retransmits the two-way tone ranging signals.

The two onboard NSP's receive commands and transmit telemetry data to the selected S-band transponder. Only one NSP operates at a time. The selected NSP converts analog voice from the onboard audio central control unit (ACCU) to digital voice and multiplexes the same digital voice with operational instrumentation telemetry from the pulse code modulation master unit (PCMMU). The selected NSP converts digital voice to analog voice for the ACCU and crew intercommunication and decodes commands for the onboard computers.

Frequency modulation is an ideal method to use for transmission of wideband data such as real time video (television) and this is why the orbiter also has FM downlinks. There are two FM downlinks because it would be difficult to put all the wideband data on one link. After the initial development flights, the DFI equipment will be reduced greatly to a limited system and there may no longer be a need for the additional DFI FM downlink.

The signals from the FM signal processor are used to frequency modulate the carrier in the FM transmitter for transmission, via one of the S-band hemispheric antennas to the ground tracking stations on the S-band downlinks. The FM transmitter is used to tranmit real-time engine data, real-time video (television), or operations recorder dump data. The Ku-band system will be added in later flights in conjunction with the TDRS system. This will provide an alternate system for television transmission. The frequency modulated transmitter carrier operates on the S-band frequency of 2250.0 MHz. Whenever the FM transmitter is active, the S-band antenna mechanism will transfer the signal to whichever hemispheric antenna is closest to the most direct line of sight to the ground tracking stations.

The multiplexed composite signal from the frequency division multiplexer (FDM) is used to frequency-modulate the carrier in the DFI transmitter for transmission, via one of the S-band hemispheric antennas to the ground stations on the S-band DFI FM downlink. The DFI transmitter carrier operates on the S-band frequency of 2205.0 MHz. It transmits DFI data on the S-band downlink. Whenever the DFI transmitter is active, the S-band antenna mechanism will transfer the signal along the operational FM to whichever hemispheric antenna is closest to the line of sight to the ground tracking station.

Both the FM transmitter and DFI transmitter can be active at the same time.If they are, there will be two S-band FM downlinks being transmitted to the ground simultaneously from the same hemispheric antenna.

There are seven S-band antenna on the orbiter: four quadrant, two hemispherical, and one payload. The quadrant antennas are located on the fuselage on the outer skin approximately 90 degrees apart. In the orbiter on the flight deck looking out the front windows, the quadrant antennas are to the upper right, lower right, lower left, and upper left. The four antennas are the radiating elements for the S-band PM downlink and for receiving the S-band uplink. The two hemispherical antennas are located on the forward fuselage on the outer skin approximately 180 degrees apart. On the flight deck, the hemispherical antennas

would be above the head (upper) and below the feet (lower). The two hemispherical antennas radiate the S-band downlink. All the antennas are covered with the thermal protection system.

The basic difference between the two types of antennas is that the hemispheric antennas have a larger beam width, while the quadrant antennas have a higher gain. The hemispheric antennas are so-called because there are four of them, two on each side of the orbiter, one on the upper half and one on the lower half of each side, which provides nearly total coverage in all directions.

The payload antenna is located in the forward fuselage on the outer skin, just aft of the upper hemispherical antenna. It will be used as the radiating/receiving element for S-band payload forward, return links and with detached payloads. This antenna will be used in later flights. The payload antenna is also covered with thermal protection.

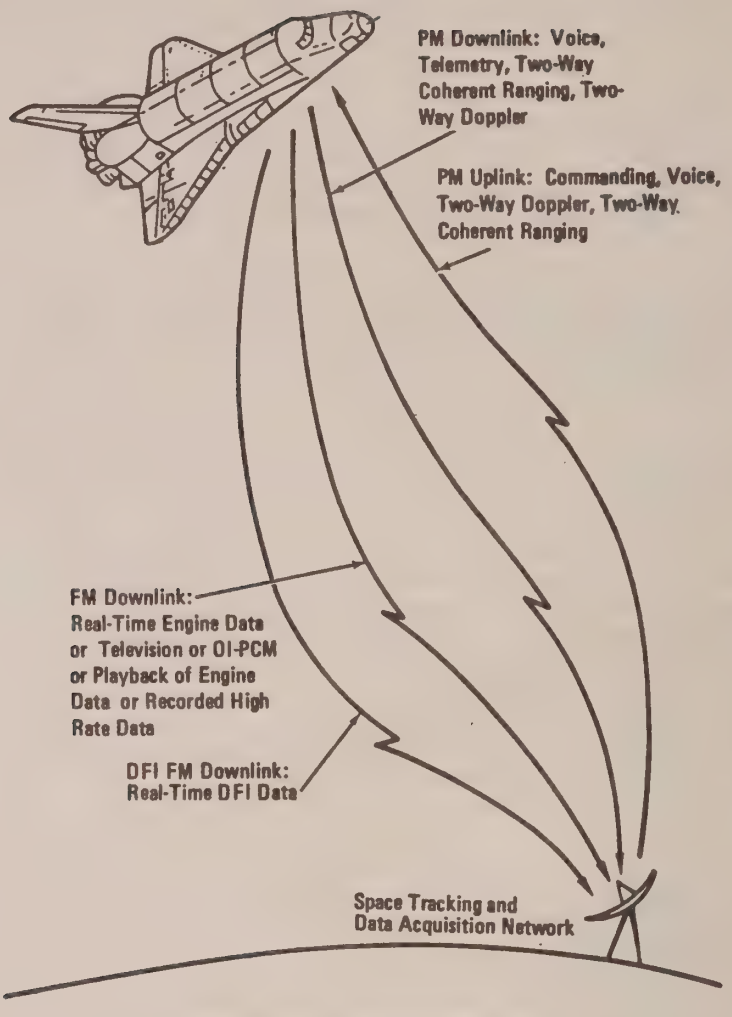
UHF Communication System. A UHF (Ultra-high-frequency) system will be in operation during ascent, on orbit, and entry as an alternative to S-band voice and commands. The UHF system is an analog voice system.

The UHF control panel located in the forward flight deck station overhead commander control panel controls the UHF communications link. The transmit frequency switch selects one of the two UHF frequencies, 296.8 MHz primary or 259.7 MHz secondary, for external transmission. The antenna select switch selects the UHF antenna on the lower forward fuselage external skin of the orbiter or the airlock antenna located in the forward payload bay. The airlock antenna is used only for air-to-air communications during EVA. The UHF antenna on the lower forward fuselage of the orbiter has a thermal protection covering. The squelch switch permits the UHF signal to be suppressed when no carrier signal is present.

A five position rotary knob on the UHF control panel selects any of the following modes of UHF transmission: EVA-transmissions made on one frèquency selected by xmit-freq" switch and the reception is on the other frequency; Off- removes all electric power; Simplex-transmission and recpetion are both made on the frequency selected by the "Xmit freq"; Simplex plus G Rcv- same as simplex except that reception of the UHF guard (emergency) frequency (243.0 MHz) is also possible; G T/R-transmission and recpetion are both made on the UHF guard (emergency) frequency. When the rotary knob is in any position other than off, it activates power to the UHF channel access switches on the audioo center panel and activates power to the UHF transceiver. All external UHF transmissions are sent to and receive from the UHF transceiver via the ACCU. All three of the UHF frequencies (296.8 MHz, 259.7 MHz, and 243.0 MHz) are preset in the UHF transmitter and can not be altered by the crew.

During EVA's in later flights, the UHF system will be used during the orbital phase of the flight. The UHF system will be used for air-to-air communications with the flight crew member who is outside the orbiter using the UHF antenna in the airlock. If there should be any need for EVA in the initial development flights, voice communications will be performed with the communications umbilical.

TRACKING AND DATA RELAY SATELLITE SYSTEM. In later flights of the Space Shuttle, a TDRS system will be placed into operation. In this system, the TDRS satellites will relay data to and from the orbiter, unmanned earth-orbiting spacecraft, and the earth station at NASA's White Sands (New Mexico) Test Facility. TDRS offers simultaneous data relay services for up to 32 user spacecraft in orbits up to approximately 2693 nautical miles (3100 statue miles) through 85 to 100 percent of each spacecraft's orbit. Today's earth stations provide only an average of 15 percent orbital tracking for each revolution as a result of line-of-sight acquisition and loss of signal line of sight to other ground stations in respect to the spacecraft. The TDRS satellite communications payload operates as a repeater, relaying signals to and from the earth station and user spacecraft. The TDRS incorporates three frequency bands, adding the high capacity K-band to the conventional S- and C-band. The TDRS, however will require much stronger signals to


PM Downlink: Voice, Telemetry, Two-Way Coherent Ranging, Two-Way Doppler
PM Uplink: Commanding, Voice, Two-Way Doppler, Two-Way Coherent Ranging
FM Downlink: Real-Time Engine Data or Television or OI-PCM or Playback of Engine Data or Recorded High Rate Data
DFI FM Downlink: Real-Time DFI Data
Space Tracking and Data Acquisition Network

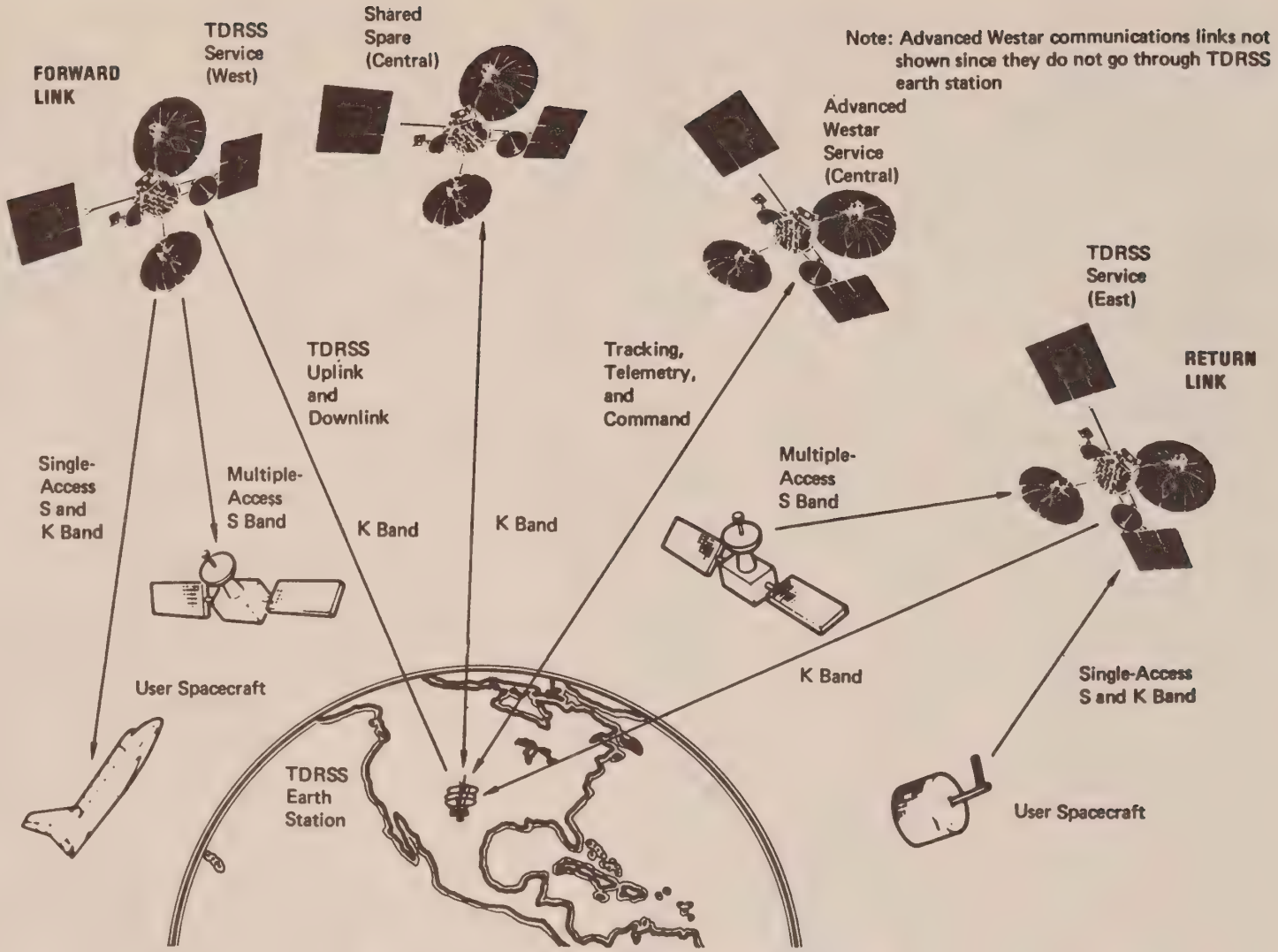
Orbiter S-Band Communication Link

travel the longer distances from the orbiter to the TDRS and ground. In later flight a Ku-band system installed in the orbiter payload bay will provide the stronger siganls.

The TDRS system will consist of four specialized communications satellites in geosynchronous orbit and a ground terminal at White Sands, New Mexico. One of these satellites will be used by Western Union as a domestic communications satellite and one will be a spare. The remaining two will provide the NASA tracking, command, and data relay services. Two of the four satellites are stationed over the Atlantic Ocean and two are stationed over the Pacific Ocean. All TDRS satellites will be placed into earth orbit from the Space Shuttle with an Inertia Upper Stage (IUS) now being developed for the USAF by Boeing Aerospace. The TDRS includes advanced redundancy and reliability features to meet a 10-year-service requirement.

KU-BAND SYSTEM. The orbiter Ku-band system operates in the Ku-band portion of the spectrum, which is 15.250 GHz to 17.250 GHz. The Ku-band provides a much higher gain signal with a smaller antenna than the S-band system. The S-band system can be used to communicate via the TDRS, but the low-data-rate mode must be used because of limited power since S-band does not have a high enough signal gain to handle the high data rate. With Ku-band system, the higher data rate can be used.

One drawback of the Ku-band system is its narrow pencil beam, which makes it difficult for the antennas on the TDRS to lock on to the signal. The S-band system will beused to lock the antenna into position first because it has a larger beam width. Once the S-band signal has locked the antenna into position, the Ku-band signal will be turned on.



Linking Four Identical and Interchangeable Satellites With Earth Station

The orbiter Ku-band system includes a rendezvous radar which will be used to skin-track satellites or payloads that are in orbit. This makes it easier for the orbiter to rendezvous with any satellite or payload in orbit. For large payloads that will be carried into orbit, one section at a time, the orbiter will rendezvous with the payload that is already in orbit to add on the next section.

The 91-centimeter (36 inch) diameter orbiter Ku-band antenna is stowed in the forward portion of the orbiter payload bay and will be deployed after the orbiter is in orbit and the payload bay doors are open. The Ku-band antenna is located on the right-hand side (looking forward). Once the Ku-band antenna has been installed, it can not be stowed. Provisions are incorporated to jettison it so that the payload bay doors can be closed.

The Ku-band antenna is gimbaled, which permits it to acquire the TDRS for communication acquisition or radar search for other space hardware. The Ku-band system is first given the general location of the space hardware from the orbiter computers. The antenna then makes a spiral scan of the area to pinpoint the target.

With communication acquisition, if the TDRS is not detected within the first eight degrees of spiral conical scan the search is automatically expanded to 20 degrees. The entire TDRS search requires approximately three minutes. The scanning stops when an increase in the received signal is sensed.

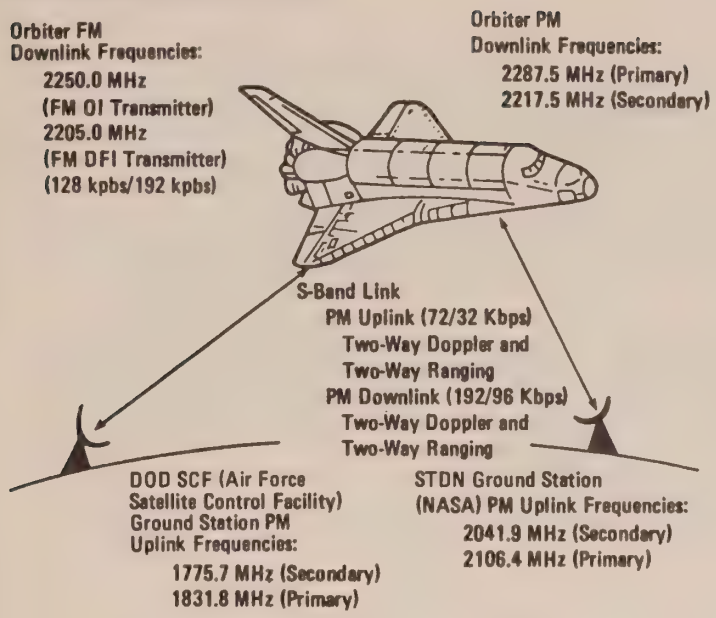
Radar search for space hardware may use a wider spiral scan, up to 60 degrees. Objects may be detected by reflecting the radar beam off the surface of a target (passive mode) or by using the radar to trigger a transponder beacon on the target (active mode).

OPERATIONS SEQUENCE- Prelaunch. The crew wearing ejection escape suits, will communicate by voice through the launch umbilical. Voice communications through the S-band and UHF systems are checked. All of the S-band and UHF uplinks and downlinks will be checked. Prior to launch, all of the recorders are powered on.

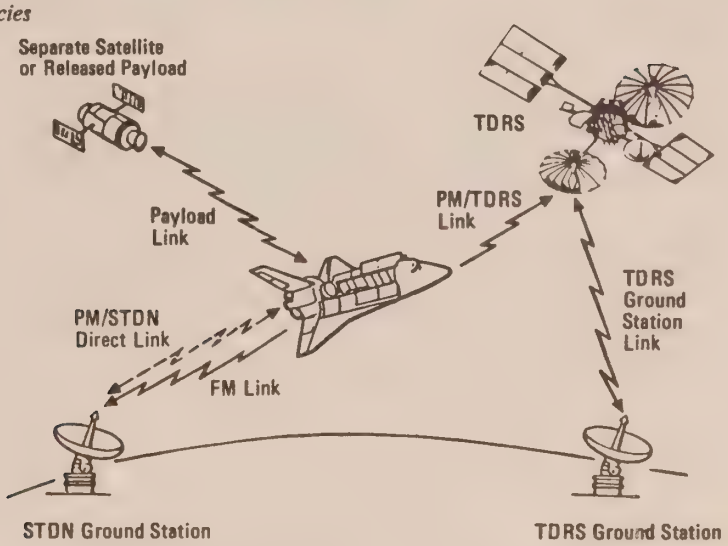
Ascent. The flight crew wearingejection escape suits, communicate by voice via the S-band PM link to ground. The S-band PM and FM downlinks transmit data to the ground and the FM downlinks will have real-time engine data. All the recorders operate in a continous mode.

Orbit. The flight crew members remove ejection escape suits and put on lightweight headsets, headset interference units, and communication umbilicals. All of the S-band and communications links can be on at the same time when the orbiter is in contact with a ground tracking station. The FM downlink will be used for transmission of real-time video (TV) and operations recorder dump data. After recording 32 minutes of ascent data, the wideband ascent recorder will shut off automatically and not be used for the rest of the flight. The PCM unit will be placed into a high or low sample rate mode of operation, and the wideband mission recorder will be shut off by the crew. The wideband mission recorder willremain off for most of the flight except when the crew will turn it on and back off again. The operations records will continue to operate under control by ground commands. They will dump whenever possible over each ground station via the FM system.

Reentry and landing. The flight crew again don the ejection escape suits. The UHF system will be used during the approach and landing phase for air-to-ground voice communications with the landing site control tower and for air-to-air communications with the chase aircraft. The wideband mission recorder will be turned on by the crew before reentry to use up the remainder of its tape. The PCM unit will be put into continous mode of operation by the flight crew, and the operations recorders will continue recording. After landing, all of the instrumentation recorder will be played back by hardline via the T-0 umbilical to retrive the data.



S-Band Radio Frequencies



S-Band/TDRS Communications

contact / info wanted

This column has two purposes: to help members contact each other, and to help members obtain information directly from one another on various subjects related to 2-way communications monitoring. If you desire to converse, meet, or correspond with other members by telephone, letter, or cassette tape in a certain geographic area or with members who have similar listening interests, this is the perfect place for you to make known your interests. Remember – those who respond will do so directly, so be sure to provide your phone number, the best time to be called, or your address. Write to:

Amy Polivka, 12906 Ohio Circle, Omaha, NE 68164

I have become the new editor of this column, so let me start by introducing myself.

My name is Amy Polivka, I'm 29 years old, married, and a housewife. Besides RCMA, I'm also a member of SCAN and subscribe to Monitoring Times. Shortwave may be my next venture as it has

recently caught my fancy.

My interest in scanning started about five years ago with the purchase of a Bearcat III. Later I got ahold of the Bearcat 8. Then came along the BC 250 and just recently the BC 20/20. I got my parents "addicted" to scanning and they ended up buying a BC 210, so as you can see, I like to promote our mutual hobby to others.

My other interests include reading, writing letters, bowling, and baseball, with my favorite team being the Kansas City Royals.

I'm really anxious to hear from you--as you know, the members make the Newsletter what it is and if no material is received, no column will appear. I welcome all responses from anyone, however, if a reply is needed, a SASE should be included. Also, no sensitive frequency requests will be published.

Will be looking forward to hearing from you soon!

Amy

Below is the final compilation of member requests sent by John Darr, previous editor of this column.. Editor

KEYSTONE FREQs WANTED: Schuylkill County (PENNA) member wishes to exchange frequencies of Schuylkill and Berks Counties for those of surrounding areas. Also looking for federal frequencies in the Pennsylvania area. (7-6-82)
MARTIN RIPKEE (PA-Ø85), 305 Haven St, Schuylkill Haven, PA 17972

FREE CENTRAL CALIFORNIA FREQs: Send this member a #10 S.A.S.E., and he'll send you his frequency list of the following: Tuolumne, Calaveras, Mariposa, and Merced Counties, California. Also Modesto, U.S. Forest Service air nets, California Department of Forestry, National Weather Service, and ham radio repeaters (2-meter band) and more! (7-7-82)
GEORGE WIGHT (NY-164), P O Box 732, Groveland, CA 95321

SPACE SHUTTLE TAPES? Oklahoma member is looking for someone who has a tape, and is willing to make a copy, of the takeoff and landing of any of the Space Shuttle missions. He's willing to reimburse the cost of the taping. (7-12-82)
TIMOTHY HAAS, (OK-Ø25), ORU Box 313, Tulsa, OK 74171

PAGING DICK STEDMAN (MA-Ø71): The member listed below would like to learn your address, so that he may write you about your recent article in the "Below 30 MHz" column. Specifically, he wants to learn what type receiver and antenna you use. Thought your article was " . . . most interesting . . . " (7-17-82)
DAVID O CHASTAIN, 1300 Normandy Lane, Blytheville, AR 72315

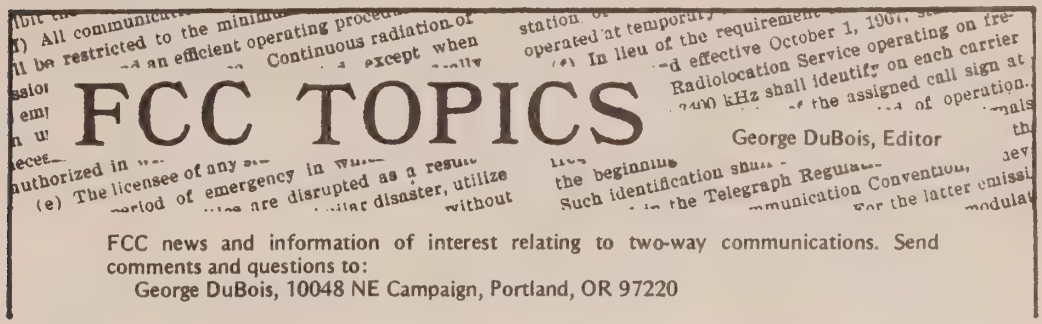
ATTN: COMPUTER USERS! Member wants to swap programs used for storing frequency lists; prefers Apple II™-compatible, but will accept others. It's also his wish to put members with like machines in touch with each other. (7-18-82)
JAMES ZUCHELLI (CA-ST-ØØ1), P O Box 1505, Modesto, CA 95353

— • — • — — • — A new member wishes to trade radio info (of any type) with other members. (7-21-82)
A. HENNEY (MD-Ø69), 6911 Prince Georges Ave, Takoma Park, MD 20912

ATTN: CALIFORNIA WILDLAND FIRE BUFFS Member wishes to obtain information, frequencies, unit numbers, and station locations for the following agencies providing fire services: B.L.M., National Parks, U.S.F.S., C.D.F., and other Department of the Interior and Agriculture agencies. He is primarily interested in locations south of Sacramento. Will exchange for Ventura County and Santa Barbara County info. (7-22-82)
RON MURRAY (CA-VE-Ø13), 3650 Schooner Walk, Oxnard, CA 93030

PHOENIX INFO WANTED: Member, new to Phoenix area, would like to meet other Phoenix-area members to glean freq data (air, railroad, federal, military, etc). 7-26-82
ROD BOURNE (VA-Ø12), 633 Kilarea Ave, Mesa, AZ 85202

NEEDS CALIFORNIA FREQs: Member will supply cassette tape and return postage for recordings of the following agencies: LAPD, LASO, LAFD, LACoFD, CHP, any Paramedic Communications, OAKLAND PD, SFPD, and any Air Traffic Control comm. (7-31-82)
RICHARD AVERY (CA-AL-Ø2Ø), 350 South 400 West #3, Richfield, UT 84701


FCC TOPICS

George DuBois, Editor

FCC news and information of interest relating to two-way communications. Send comments and questions to:
George DuBois, 10048 NE Campaign, Portland, OR 97220

The Power Radio Service

Most of us hardly ever think of listening to power companies unless the lights go out. Not surprising, since most listening on these frequencies is rather dull. Conditioned to activity on police and fire channels, no one wants to hear about disabling reclosures and relighting pilot lights. We want to hear about downed power lines and puptured pipelines, right?

The Power Radio Service frequencies are available to entities engaged in the generation or distribution of electrical energy. Note that this is not limited to private utilities. If you have municipal power, your city is just as eligible in this service as PG&E or whoever. The same goes for public utility districts and co-ops. Also eligible are providers of steam or water. Again, this can be municipal or local water districts. And finally, also eligible are companies engaged in the distribution of natural gas by pipeline, although provision is made for use of these frequencies for delivery of LPG by other than pipeline, by the same company, outside the area of their pipeline system. Also, the same company can use these frequencies for the manufacture and storage of gas, in addition to its distribution. What this means is that a pipeline company can use these channels at their refinery, but a company that is only engaged in refining wouldn't be eligible. (They could be licensed in the Petroleum Radio Service.)

Frequencies available on low-band are the channels from 37.46 through 37.86 and from 47.70 through 48.54 mHz in .02 mHz increments. 37.60 and 37.84 are reserved for "interconnected or coordinated utility systems", sort of a power mutual aid frequency, for want of a better description. On high-band the channels run from 153.410 through 153.725 and from 158.130 through 158.265 mHz in .015 mHz steps, although most of these channels are shared with the Forest Products and Petroleum Radio Services in the states of AR, LA, OK, OR, TX and WA. Also available, except in those states, are 173.250, 173.300 and 173.350 mHz. On UHF the channels are from 451.025 through 451.150, plus 451.200 and 451.250 mHz. 451.175, 451.225, 451.275 and from 451.375 through 451.675 (in .050 mHz steps) are also available but are shared with other services and will only be assigned if the first group of UHF channels are already used, the ones that are available exclusively. Also available are frequencies in T-band (470-512) where those channels are allocated and the 851-866 mHz band. Repeaters are allowed in all bands.

Thats it as far as mobile frequencies go, but theres a whole bunch of other channels for more specialized uses. 154.6375 is available for multiple address peak load shedding. The 216 to 220 band is still available for telemetry, but on a shared basis with government telemetry and military radiolocation. The following frequencies can also be used for telemetry and remote control:

154.45625	173.2375	173.3375
154.47125	173.2625	173.3625
154.47875	173.2875	173.390
173.20375	173.3125	173.39625
173.210		

They are shared with other services. Here locally, Northwest Natural Gas uses 154.47125 and 173.20375. Pressure and flow data is brought from gate stations by phone lines to the transmitters located in Vancouver and Washougal, Washington, across the river from Portland. They are received in Portland, then sent by phone lines to their headquarters downtown. All this really does is save them the cost of phone lines between the two states, which would cost them a small fortune.

The following channels are available for transmitting hydrological or meteorological data and are shared with the US Government:

169.425	170.275	171.125	406.175
169.450	170.300	171.825	409.675
169.475	170.325	171.850	409.725
169.500	171.025	171.875	412.625
169.525	171.050	171.900	412.675
170.225	171.075	171.925	412.725
170.250	171.100	406.125	412.775

A number of systems operate on these channels in this part of the country, data acquisition systems for the National Weather Service, BPA, and one used by the Corps of Engineers and Pacific Power and Light Company. Various stream levels, for example, are not only of interest to the Corp of engineers, but to PP&L as well. So they operate a combined system on a half-dozen of these channels.

Frequencies from 452 to 454, 457 to 459, 460 to 460.625 and from 465 to 465.625 may also be used for fixed service, but only over 85 miles from any large urban area. The 72 to 76 mHz band likewise is available for fixed use but for the most part utilities will use the frequencies for control links for their VHF mobile channels. I don't think you'll find much telemetry on these frequencies but you can hear their mobiles a heck of a lot farther away on the downlink freq. Higher up, the frequencies 928.3625 through 928.8375 mHz in .025 mHz increments are available, paired with the channels from 952.3625 through 952.8375 mHz. These channels were allocated last year for radio-controlled load shedding and distribution systems, similar to the 154.6375 frequency. It was visualized that receivers, or transceivers, located at customers premises could be used to disconnect appliances such as water heaters, on radio command during peak load times. The paired, reply channel could be used for acknowledgment. Mobile use of the 952 mHz frequencies is also permitted. This will allow development of remote meter-reading systems. Mobile use is on a secondary, non-interference basis, but any use for meter reading will undoubtedly be in rural or remote areas anyway. Other frequencies with wider bandwidths are available in the 952 to 960 mHz Operational-Fixed band (to other services as well) for fixed multi-channel voice and data links.

The Power Radio Service was one of the first services in which digital-scrambled modulation (DVP™) was permitted. (The Police and Fire services were the first.) Nuclear power plant security was supposedly the reason for this. One utility frequency guide of

questionable value cites this as one of the "exciting" things to listen in on, even though the only nuclear plant in this state uses outside security people. No, you'll probably just have to be content listening to talk about broken water mains and power hook-ups to new houses (etc.,etc.). But by finding the active channels in your area now, you'll be all set the next time something happens. Then when you are sitting in the dark trying to run your 250 on D-cells, those power company channels will be more interesting than any police channel.

FEDERAL GOV'T and ☆ MILITARY ☆

Send all Federal Government and Military frequencies (including those of military aircraft), radio system details, and related questions to:
Dennis Biagioli, 607 W. Pleasant Ave., Villa Park, IL 60181

Sensitive frequencies will not be published. Coast Guard material must go to the VHF Marine editor.

Hi! Best wishes to all from the steambath we around here affectionately refer to as Summer in Chicago. By the time this reaches print, 93° and matching humidity will be just another fond memory.

Pardon the column overlap, but just want to mention to those of you who monitor anything regarding Air Force "Eye In the Sky" E-3A Sentry AWACS, found a few very interesting photos and lots of words in the September, 1982, issue of AIR COMBAT magazine.

* * *

DUANE PECK (MS-009) sends the following ALASKA. (I wonder what his air conditioning bills are like??):

163.175	Initial Fire attack, "Red"	5287.5 (HF)
163.020	"Gold"	5242.5 (HF)
163.050		4863.0 (HF)
163.075		
127.450		

"These (Bureau of Land Management), I believe, are standard across Alaska. B.L.M. has the main responsibility here of fighting forest fires. Frequencies are used by both ground crews and planes."

* * *

RONNIE WHITTEN (TX-029) sends the following:

38.30	Ft. Hood Lifesaver Helo(s).
148.825	Darnell Army Hospital, ambul./disp., simplex
165.085	Ft. Hood Military Police, Ch. 1, simplex
165.160	Ft. Hood Military Police, Ch. 2, simplex
173.510	Ft. Hood Tank Range, Fire Control
163.435	Army Corps. of Engineers, repeater out, Stillhouse Hollow Dam and Belton Lake and Dam

* * *

GEORGE MOE (WI-004) sends clips from a Coast Guard publication that is clearly labeled "unclassified." It lists some non-Marine Band frequencies used for some repeater operations (Freqs. are repeater in/out order):

Cleveland	165.3375/164.5000
Duluth	165.3375/166.0750
Chicago	165.3375/166.0750
Milwaukee	165.3375/166.0750
Detroit	165.3375/166.1500
Buffalo	165.3375/163.4375
Buffalo (Pollution Cntrl)	159.480
Lake Mead Nat'l Park Svc. Comm Net (duplex)	166.9000/166.3000
Black Metal Peak	157.000/161.600
Muskegon CG/Police Net	155.4900/156.0900

* * *

GREG DANES (VA- ?) sends along the following from the Washington, D.C., area:

162.200	Army mobile phones, DC
163.4875	Andrews Air Force Base, Security (HT's)
413.3750	Andrews Air Force Base, Security, primary
142.0000	Navy Taxi Service, The Pentagon
149.565	Air Force Security, Langley, VA, Ch. 2
165.8250	Air Force Security, Langley, VA, Ch. 1
415.2000	Navy Security, MD (possibly GSA ??)
417.2000	General Services Admin., Fed. Protection Svc.
149.3500	Washington Navy Yard

* * *

Many thanks to Duane, Ronnie, George and Greg for taking the time to share their research. I will close for this month by sharing a bit of mine. First, some U.S. Air Force and Air Guard frequencies from O'Hare Field -- the "military side" of Chicago O'Hare International Airport. All are simplex.

149.150	"Maintenance Control"
163.000	"Security," and "Operations"
165.010	Maintenance of aircraft
173.560	"Control" and "Alpha" units
413.200	(usage undetermined)
163.485	"Police Desk"
163.585	Fire & Crash Crews
165.135	Aircradt maint., "Victor Control"

Finally, a list of frequencies I extracted from the Grove "Federal Frequency Directory" before a recent trip to Washington, D.C. This is the UHF (406 to 420 MHz) section. No attempt is made here to say which are definitely in current use. Hopefully, as readers confirm them, you will send some information along and we can publish our own D.C. "Guidebook" right here in the NEWSLETTER. I'm running the UHF because it seems to be the least understood of the government bands. So, now as you tour DC, here's a starting point. Happy hunting!

Washington, D.C.

U H F

407.200	State
407.225	Army
407.300	Army, Ft. McNair
407.700	Health & Human Services
408.050	Health & Human Services
408.100	State Department
408.125	Library of Congress

408.475	Labor Department
409.025	Dept. of Energy
409.050	Interior Dept.
409.100	Office of Technol. & Assess.
409.125	Labor Dept.
409.200	Interstate Commerce Comm.
409.2375	Coast Guard
409.3250	Veterans Admin.
409.400	Fed. Home Loan Bank Board, Gvt. Accounting Office, & U. S. Tax Court
409.4875	Federal Aviation Admin.
409.550	Interior Dept.
409.6250	State Dept.
409.650	Interior Dept.
409.700	State Dept.
409.750	Interior Dept.
409.850	Interior Dept.
409.925	Army, Ft. McNair
410.200	Govt. Printing Office
410.250	Fed. Aviation Admin.
411.400	Library of Congress
411.625	Interior Dept.
411.725	Interior Dept. (also Ft. Reno)
411.825	Interior Dept.
411.925	Interior Dept.
413.225	Army
413.425	Health & Human Services
413.475	Army
413.875	General Services Admin.
414.325	Veterans Admin.
414.700	Treasury Dept.
415.000	Treasury Dept.
415.200	General Services Admin.
415.450	Govt. Printing Office
416.1250	Interior Dept.
417.200	General Services Admin.
417.7250	Interior Dept.
419.1250	Transportation Dept.
419.600	Health & Human Services
419.975	Transportation Dept.

* * *

International

Richard Stein, Editor

This column is for reporting two-way communications frequencies above 30 MHz, radio system details, monitoring experiences, and any other information relating to monitoring in countries other than the United States and Canada. Send to: Richard Stein, 456 Barrymore Place, North Brunswick, NJ 08902.

We have information this month from a number of members. Bruce Portzer (WA-016) sends a list of frequencies which might be of interest to some members. These frequencies were gleaned from a directory of Mexican radio stations and are apparently studio-to-transmitter links. Bruce believes there are a lot more, but these were the only ones listed in the directory. Call letters and frequencies of the AM stations are listed.

148.640	XEAO	(910)	Mexicali, B.C.	(50w)
153.260	XEBX	(610)	Sabinas, Coah.	
173.420	XEBX	(610)	Sabinas, Coah.	("Remote Control")
216.375	XETU	(980)	Tampico, Tams.	
216.825	XEOLA	(1460)	Tampico, Tams.	
216.975	XEUX	(810)	Tuxpan, Nayarit	
217.125	XEO	(970)	Matamoros, Tams.	

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From Bob Horvitz, our Below-30MHz editor:

(from the Joint Publications Research Service, Korean Affairs Report, #181, 19 Jan 82, via YONHAP...

The Seoul metropolitan police headquarters (SMPH) plans to begin a round-the-clock radio broadcast early next year, to provide information ranging from weather reports to the records of criminal fugitives, AMPH sources said Wednesday. The sources said that the planned broadcast of VHF radio programs would expidite police business, by making available to policemen in the metropolitan area firsthand information involving overall police operations. The sources added that the broadcast can be picked up only by specially designed FM radios, to be distributed to each of the police stations and their substations in the capital city.

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From Rinehart Potts (NJ-047):

(from SIP, The Swedish-International Press Bureau, Linnégatan 42, S-114 47 Stockholm)

A wholly automatic, computerized radiocommunication control system for the minibus transport service for disabled persons operated by the Greater Stockholm Public Transport Company (SL), has been developed by SRA Communications AB, a subsidiary of the Ericsson Group. Costing Kr.7 million($1,200,000), the system will serves 7,000 handicapped people who are dependent on the 275 specially-equipped minibuses which SL puts at their disposal. Each year, the buses make over 700,000 journeys.

The new system is based on the transmission of digital signals via radio. It enables traffic planners to send a digitally written instruction to individual drivers within seconds of a decision being made regarding bus/journey. In the vehicle, a computerized radio transforms the radio signals into an ordinary printed instruction. Thus, both traffic planners and drivers avoid verbal contact about which vehicles are in service, where they are located, when they will be ready to leave their present location, etc, and 'radio chatter' will be a thing of the past

Bookings are received by telephone and registered by a computer, making possible quick assessments of vehicle requirements at various times, and in different areas. Traffic planners are furnished with booking lists by printers or terminal screens, the latter also showing the number of 'free' vehicles in each of SL's traffic sectors. As a result, planners are provided with an improved overview and are able to coordinate journeys in a more economic manner than previously and better exploit resources generally.

The system, which was designed in close collaboration with SL, is said to ensure a substantially quicker and more reliable traffic control as well as yielding a higher radio capacity and creating a better working environment for drivers

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Several members have written with comments concerning the article on the Nordic mobile phone system. They enjoyed the article but questioned why I didn't include any frequency information. I wish that there was frequency information to be included, but frequently , even as with the two interesting articles this month, there is only general information about the system. The Nordic system article was a six page booklet, -in color, but alas without any indication as to frequencies used. You can be assured that whatever frequency information I have will be included here.

In future months, I will have some very detailled information about Sweden and the frequencies used there. I received a fine packet of information and have set about to digest it and prepare it for several future columns.In addition, we are working on the second of the Russian articles and I have additional Mexican information from our member in Tijuana.

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The list of Mexican STL's reminded me that I had similar information stuck away in an old publication from the US GPO. With some digging, I located a copy of "Broadcasting Stations of the World- Part iv, FM and TV Stations", 17th ed., 1 Sept 1961. These publications attempted to list all reported radio and TV broadcasting stations, except those in the USA on domestic channels. The following is a bit dated but perhaps of interest.

30.500	HORT-FM	Radio Selecta	Panama City PAN 25w
30.840	HP5C-FM	Rd. Cadena Miramar	Panama City PAN 30
31.500	YVMJ-FM	Rd. Carora	Carora VENEZUELA 25
35.350	HOG-2	Rd. Panamericana	Panama City PAN 60
37.900	HOLY-FM	Rd. Hogar	Panama City PAN 50
43.770	YVMB-FM	Ecos del Zulia	Maracaibo VENEZ 100
44.300		gov't ops	Suwon SO KOREA 250
44.500		gov't ops	Suwon SO KOREA 250
45.300		gov't ops	Seoul(Namsan)SO K 60
46.100		gov't ops	Chongdong SO K 60
46.300		gov't ops	Seoul(Namsam)SO K 250
47.440	YVND-FM	Rd. Catatumbo	Maracaibo VENEZ 30
47.700	AFRTS	USAF	Tokyo JAPAN 50
48.300		gov't ops	Chongdong SO K 60
49.540	YVLM-FM	Rd. Rumbo	Maracaibo VENEZ 60
49.600		gov't ops	Chongdong SO K 250
49.900	HOH-FM	Circuito RPC	Panama City PAN 60
	HOH-49	Circuito RPC	Panama City PAN 60

•••• listings in the 64-72 band are only for stations NOT in Eastern Europe & USSR which uses this band for regular FM service.••••

65.500		gov't ops	Lima PERU --
67.500		Sauti Ya Unguja	Marhubi ZANZIBAR --
71.500		gov't ops	Tel Aviv ISRAEL 250
78.600	YVLW-FM	Rd. América	Valencia VENEZ 80
140.400		Rd. Calama	Calama CHILE 250
150.000	YSS-FM	Rd. Nacional de El Salvador	San Salvador ELSAL 500
152.990		Ondas de Luz	Managua NICARAGUA 20
153.320		Rd. Caracas	Caracas VENEZ 50
157.300	HJR-26	Emisora Nueva Granada	Bogotá COLOMBIA 250
161.550	YVLK-FM	Rd. Rumbos	Caracas VENEZ 15
166.200	HJDI-FM	Emisora Pontinicia Bolivariana	Medellín COLOM 250
167.100	YVHK-FM	Rd. Crono Radar	Caracas VENEZ 10
167.420	YVKY-FM	La Voz de la Patria	Caracas VENEZ 50
167.480	YVLT-FM	Rd. Miranda	Los Teques VENEZ 50

167.600	YVKB-FM	Radiodifusora Venezuela	Caracas VENEZ	50
168.020	YVKA-FM	Radiodifusora Nacional de Venez.	Caracas VEN	50
168.020		La Voz de Carabobo	Valencia VENEZ	50
168.400	YVQS-FM	Ondas Portenas	Puerto de la Cruz VEN	50
168.400	YVOB-FM	La Voz de Tachira	San Cristóbal VEN	500
168.900		La Voz de Tachira	San Cristóbal VEN	50
169.700	YVKA-FM	Radiodif. Nacional de Venez	Caracas VENEZ	50
170.000	YSS-FM	Rd. Nac. de El Salvador	San Salv. EL SAL	500
170.180	YVLK-FM	Rd. Rumbos	Caracas VENEZ	25
171.670	YVLL-FM	Rd. Rumbos	Caracas VENEZ	50
171.670	YVOD-FM	Ecos del Torbes	San Cristóbal VEN	50

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Until next month.... שלום

Marketplace

Gary M. Darcy, Editor

Members may advertise, free of charge, items wanted, items for sale, and items for trade that are associated with the hobby of monitor/utility radio listening. No dealer ads will be accepted for this column. RCMA assumes no responsibility for the outcome of any transactions between members resulting from ads printed in this column. Send to:
RCMA MARKETPLACE, c/o Gary M. Darcy, P.O. Box 1329, Palmdale, CA 93550.

Please be sure to include your membership number.

All Marketplace ads will be accepted ONLY on special forms available from this column's editor. Send a self-addressed STAMPED envelope (business size) to the address above to receive a supply of forms. Foreign members do not need to include postage on envelopes they send.

FOR SALE: Bearcat type crystals. $ 3.00 each or $ 45.00 for all 16 available crystals. SASE for list of frequencies. Contact: RICHARD AVERY (CA-AL-020), 350 South 400 West, #3, Richfield, UT 84701. (7-31-82)

FOR SALE: Sonar FR 2515. 8 channel VHF scanner w/priority. Have 3 for sale. Price includes UPS shipping. $ 60.00 each. Contact: CHUCK O'CONNOR (CA-SC-017), 1833 Germaine Ct., San Jose, CA 95122 or phone 408-279-0548. (7-28-82)

FOR SALE: Sears Programmable scanner. 16 channels, uses cards. All accessories included. Little use. $ 150.00. Contact: WILLIAM J. GIBBS, JR. (NC-009), Rt. 1 Box 271B, Columbia, NC 27925. (7-22-82)

FOR SALE: Drake R7A Receiver. 0-30 mhz. Excludes NB and 500 hz CW filter. $ 1300.00. Contact: WILLIAM PEPE (NJ-116), P.O. Box 665, Bloomfield, NJ 07003 or phone 201-482-6629. (7-25-82)

FOR SALE: Pansonic RF 4900. Modified general coverage receiver. Manual included. Price includes UPS shipping. $ 350.00. Contact: WILLIAM A. ALGERI (PA-162), 232 Creston Dr., West Mifflin, PA 15122 or phone 412-466-1893. (7-28-82)

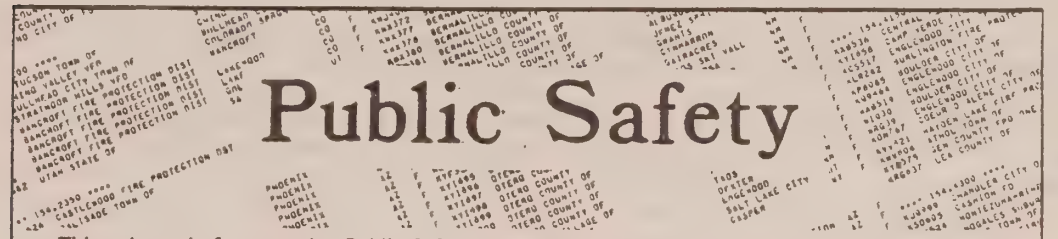
FOR SALE: Radio Shack DX 160 receiver. Like new condition. $ 125.00. Contact: BOB ABERNATHY (NY-010), 11 Leeds St., South Huntington, NY 11746 or phone 516-427-3849. (7-13-82)

FOR TRADE: Regency ACT-R-92AP for Hi/UHF pocket scanner. Contact: JEFF HOWELL (KY-023), P.O. Box 463, Madison,IN 47250. (7-12-82)

FOR TRADE: Realistic DX 160 receiver for a 2 meter rig, HF transceiver (Heath HW-101), RTTY equipment, or ??? Make offer. Contact: LARRY VAN HORN (TN-014), 1111 N. Carrier Pkwy, B-107, Grand Prairie, TX 75050 or phone 214-642-8407. NO COLLECT CALLS, PLEASE. (7-3-82)

FOR SALE: Uniform shoulder patches similar to California Highway Patrol only they state California Ambulance. $ 1.00 each plus #10 SASE. Contact: CHUCK O'CONNOR (CA-SC-017), 1833 Germaine Ct., San Jose, CA 95122. (7-24-82) (Editor's Comment: Chuck indicates that he acquired 100 of these patches. California Ambulance went out of business when the county he lives in formed paramedics. Those of you who are into collecting patches may want to help Chuck unload some of these by buying one from him.)

For Sale: Realistic 8 channel crystal-controlled VHF/HI scanner. Model No. PRO-8. Selectable priority, built-in delay, original packaging, mounting hardware; manual and telescoping antenna included. Excellent condition. $75.00 or best offer. Contact: David R. Allen (AZ 004), 1616 N. Winstel Blvd., Tucson, AZ 85716, or phone (602) 325-5096.



This column is for reporting Public Safety and Special Emergency frequency information, radio system details, radio codes, dispatch areas, unit numbering systems, etc. for police; sheriff, fire, forestry (except USFS), fish and game, highway patrol, state police, prisons, prisoner work camps, local government, highway & street maintenance, port authority/bridge maintenance, animal control, ambulances, paramedics, hospitals, life guards, ski patrol, search & rescue, flood control, civil defense and disaster organizations. Input and questions for this column must be sent to the proper regional Public Safety editor listed below.

PUBLIC SAFETY - GREAT LAKES:

Send Public Safety and Special Emergency frequencies, radio system details, and questions as follows – Illinois, Indiana, Wisconsin, Michigan, Kentucky, and Ohio:

John Arendt, 327 Boulder Hill Pass, Oswego, Illinois 60543.

Greetings from Oswego and welcome aboard to another "Public Safety-Great Lakes" column. Fall is in full swing now. This is a good time to get up on the roofs, towers, etc. and check out the antennas and coax before the onset of the cold temperatures (and winter, unfortunately).

There's lots of material to cover this month, so it's time to go forward.

R.C.M.A. MEMBERS TOUR OF THE ILLINOIS STATE TOLLWAY AUTHORITY HEADQUARTS AT OAKBROOK on June 19th. Six members and 3 guests met at the Administration Bldg. for the tour that began promptly at 2 P.M. Mr. Louis A. Worden - the Asst. Manager of Technical Services - acted as our host. Areas inspected included: the office areas (currently being remodled), the dispatching area (and nearby IL State Police Dist. 15 quarters), the computer room (where Tollway Authority records are stored for "retrieval"), several radio shops (where communications eqpt. is fabricated, repaired, and installed), plus several rooms housing complex communications and microvawe gear. There vehicles were also inspected. There was ample time for questions and answers all thru the duration of the tour, which was concluded at approximately 3:45 P.M.

As a sidelight to the tour, June 19th also turned out to be the date of the annual Dist. 15 State Police inspection. Those on hand were able to observe the proceedings going on the parking lot just to the west of the Administration Bldg.

Chuck (IL-141) filed this report shortly after the devastating tornado hit Marion, IL on May 29th. With some minor editing on my part, I'm turning this into a

contribution to be entitled SCANNING AND DISASTERS - IL. STYLE "I was at home at the time the tornado hit and heard the whole thing go down on my scanner! One Williamson Co. S.D. car (155.070 rptr out) followed along behind the twister as it paralleled Rt. 13 and hit Marion. He made cool statements like 'there goes Skelly's Truck Stop' and 'Taco Gringo has been totally demolished'. Another officer watched as the top of his house was pulled off. A Dist. 13 state trooper (42.600B/42.680M/154.935) followed it out of town till it lifted off just past Rt. 166 - about 8 miles due north of Creal Springs.

The power went off as soon as the tornado hit Marion, but I had alr dy run jumper cables from my motorcyle battery to the scanners. It only lasted 5 hours and it was necessary to remove the battery from my truck for the remaining 8 hours until the power came on. I had no 12VDC television, so the media freqs. came in handy. KFVS-Channel 12-Cape Girardeau, MO was up in a plane (450.980) and gave a good summation of the damage.

The 'Rescue 4' mobile radio command center was set up at the State Office Bldge. and operated on 155.460 (I.S.P. "HF4 or Channel 7"). Helicopters were most often on 155.025 (ESDA freq. in wide use in IL), 42.500 (I.S.P. car-car), 154.710 (executive and governor's security), 45.440 (statewide ESDA freq), 155.460, and 155.475 (NLEEF*ISPERN). The command center also used 154.950 (D.C.I. "HF3") for heavy security, although there was very little of that - only two looters were arrested while trying to break in to the People's Bank vault.

The IL National Guard (W. Frankfort and Mt. Vernon) had mobile-bobile traffic on 38.890 and Dist. 11 ESDA (Marion) was heard repeatedly on 45.440 (high band ESDA freq. not in use). The National Guard communicated with Williamson Co. S.D. on 39.500. None of the soldiers seemed to have any H/T's and they were always with other policemen. Two other possible freqs. that may be in use by our Southern IL National Guard are 38.690 and 38.910. Nothing was heard in the 40-42MHZ range.

Things aregetting back to normal, but it will take some time to clean up and re-build".

(Editor's comments: Chuck, thank you for a most informative and enlightening contribution! In lieu of what has been reported, I'm sure that our Federal/ Military, and Business column editors will not object to the contents of this report. Where just about all other means of communication were knocked by the tornado, the scanner sure came in handy).

JOHNSON COUNTY, IL has a high band freq. of 155.145 available for use by the Sheriff's Dept. (It's actually listed for the city of Vienna). Known as "county band" or "high band", the police and sheriff's dept. use it for more "secure" communications.

SOUTHERN IL ESDA UPDATE Chuck (IL-141) finishes his contributions with news about high band and UHF capabilities for ESDA agencies.

1. Region 11 - Marion has UHF capabilities and can be found on 453.875 rptr and simplex in addition to statewide 45.440 and regional 45.280 freqs. Traffic with local counties is coordinated on 45.440.
2. The West Frankfort National Guard Armory can be found on 155.025 where separate coordination with local counties can be heard.

The big question is: When does 155.025 go into use in addition to 45.440 as a statewide ESDA freq?? Stay tuned for further details.

BRADLEY IL P.D. can be found on the new freqs. of 154.800 rptr. out. (159.030 in), per Martin (IL-125)

KEMPTON, IL V.F.D. has recently been granted an FCC radio license and can be found on 154.190. The dispatcher is none other than Harold (IL-092).

ILLINOIS STATE POLICE UPDATE. New Dist. 20 at Pittsfield encompasses the counties from the "old 14A" (Adams and Pike) plus new counties of Scott (formerly in

Dist. 9), Brown and Schuyler (both formerly in Dist. 14).

INDIANA STATE POLICE news - courtesy of Mark (IN-014):

1. New Post. Dist. 12 post at South Bend has been closed and operations have been moved to Bremen in northern Marshall Co. The new district is in Area 2 and is known as Dist. 24. It serves at least St. Joseph, Marshall, and Kosciuzko Co(Kosciuzko Co. formerly was in Dist. 21-Ligomer). Call sign in use is KSC 899.
2. New Peru Post. Dist. 23 recently moved into a new facility near the intersection of U.S. Rts. 24 & 31. The tower at the old post is still used as the new post is to close to the Grissom A.F.B. for a large tower. A short microwave link connects the old and new towers.
3. Remote sites.
   A) A remote rcvr. is in use at Hortonville (tipton Co.) and is connected to Dist. 23 at Peru.
   B) A remote transmitter and receiver is believed to be in operation at Warren (Huntingdon Co) and connected to Ft. Wayne Dist. 22. Both locations are licensed as KSC813. There is a noticeable difference in signal strengths-as monitored at Mark's location.
4. Use of new freq. 42.400. The freq. is installed in all bases and mobiles now, but is not yet in use. Mobiles have it as "F-2" and bases list it as "42.40".
5. 155.445 is referred to as "Disable" on all radios.
6. In addition to the 4-channel low band radios used in all cars, a 2-channel high-band convert-a-com radio is present. Mobile extenders work off the high band radios. Freqs. in use are 155.475 (NLEEF-ILEEN) and 155.445 ("Disable").
7. New freq. assignments in the high band are now appearing and may be undercover and/or surveillance freqs. Licensed to the "State of IN" as KA78254, members should monitor 154.595, 154.920, 155.460, 155.505, 155.625, 158.790 and 159.090 and report any results. (The KA 78264 license also applies to 155.445 and 155.475).

Mark (IN-014) finishes his lengthy contributions with some MISC. IN ITEMS

1. Marion Co. Suburban Fire Freqs.
   154.205 Oaklandon F.D.
   154.250 Wayne Twp. F.D. (mobiles on 153.950)
   154.340 Perry Twp. F.D. (mobiles on 153.815)
   156.000 Peech Grove F.D.
   154.130 Pike Twp., Washington, Twp., and Caslteton F.D.'s are dispatched here - vs the listed freq. of 154.235
2. Indianapolis Metro Area Fire Freqs.
   154.010 Town of Fishers
   155.820 Town of Greenfield
   158.880 Town of Martinsville
3. Marion County Civil Defense can be found on 155.025 and 158.820 (licensed as KSI722 to the city of Indianapolis).
4. New F.D. Rptr in the Ft. Wayne Area has been found on 154.325. (The input freq. is 154.445. The license KNBU361 is issued to Allen County and is also valid for 154.010 and 154.415).
5. Wabash County S.D. has not yet begun to use its new "F-3" of 154.815 for dispatch purposes. (it is in use as a discrete channel, though). Dispatch functions will begin when a new towner is completed. (There is interference with the Wabash P.D. on 155.130 and 154.890).
6. The Wabash Co. S.D. now has capabilities on 155.805, the county civil defense operations freq. This allows for better coordination between the sheriff's and civil defense in emergencies. The sheriff's office also does all paging for civil defense on 154.310 (KSR617-county fire).
7. Mis. frequencies identified
   154.540 KNCJ682 Howard Community Hospital (Kokomo) amublance operations
   155.055 KBE971 Riverview Hospital-Mobelsville (Licensed under "Hamilton, County of")
   155.745 KRS344 Indiana University-Purdue University-Ft. Wayne Campus
155.925 KGQ954 LaGrange County, IN Sheriff's Dispatch

158.775 KUU477 Wabash County, IN Hospital-Paging, security and administrative
155.955 KJI353 Ft. Wayne, IN State Hospital
453.725 KNA0449 Marion, IN City Public Transit

Mark, thanks are in order for some excellent contributions.

BERRIEN COUNTY, MI AREA UPDATE courtesy of Terry (MI-097). A new frequency of 453.600 has been placed into use for the animal control function. The old 155.100 freq. has been reassigned for "emergency" purposes. (County-to-ambulance)

This column comes to a close for now. More next month.

Happy Monitoring!

PUBLIC SAFETY - NORTH CENTRAL:

Send Public Safety and Special Emergency frequencies, radio system details, and questions as follows — Iowa, Kansas, Missouri, Nebraska, N. Dakota, S. Dakota, and Minnesota:

Michael W. Scheel, RR #1, P.O. Box 221, Walcott, IA 52773

Welcome to North-Central for October. The winter is coming, so please send those Highway Maint. Radio Informations to me in time for the December Column.

Quad-City Net The Police Depts in the Quad-Cities area have a net to pass information about crimes or persons.

155.370 Base only	Iowa		Illinois	
	Scott County	KGT-566	ISP Rock ISland	KSB229
	Davenport	KTA-976	RICOMM	KSB315
	Bettendorf	KAB-263	Moline	KSA330
	LeClaire		East Moline	KSB316
			Silvis	KAR955
			Milan	KSZ871
	U.S. Army Rock Island Arsenal AAF273			

Scott County Sheriff's Radio

Channel 1 156.210 156.210 BM Operations
2 155.580 155.415 BM Information
3 155.790 154.770 RP State LEA-TAC
4 155.475 155.475 BM Mutual Aid
5 not in use yet
-1155.370 BA Quad-City Net
- 155.340 155.340 BM EMS statewide
- 154.025 154.025 BM Buffalo Cityband (County has wireline control of transmitter, no county cars)

The Console can patch any of the channels with any others, plus Davemport PD 1/2/3. Phone Patchs can be made also.

Scott County Car Prefix is 82
82-01 to 82-79 are Sheriff Dept personnel
an "A" suffix is a nondeputy unit usually a Posse Member
82-81 Long Grove Police Car
82-101+ Eldridge PD
CH 5 155.040 155.040 BM Cityband
CH 6 unkown
CH 7 - 155.070 MO Car to car
82-301+ Walcott PD
CH 5 153.860 153.860 BM Cityband
82-401+ Buffalo PD
Ch 5 154.025 154.025 BM Cityband
82-501+ Blue Grass PD
(Because of the move to HighBand. THe freq 37.3 listed in Police call was never used)

82-86A County Park Ranger
44.76 44.76 BM The Admin Bldgs at SCOTT COUNTY PARK & WEST LAKE PARK have thebase Stations
AIR-ONE General Utility Helicopter (owned by Sheriff's Posse and flow by Posse members)
avrcraft radio
County 1/4
Davenport 1/2/4
Bettendorf 1

Davenport PD
1 460.125 RP Dispatch
2 460.150 RP Secondary
3 460.275 RP Info & Backup
4 460.150 MO car to car

Beat Cars 1-8
Street Command 16-19
Animal Control 50,50A
Evidence Tech 45
Street Crime 80-89

Bettendorf PD
1 460.375 RP Dispatch
2 460.150 RP Davenport PD CO-OP
3 460.375 MO car to car
4 ?

only Officer Badge # used

LECC- LeClaire Emergency Communication Center
1 453.050 rp Dispatch
2 453.050 MO car to car
- 155.370 BA Quad-City Net
- 154.220 BM Leclaire VFD (City PD has fire chan as CH5
- City Cars has Scott County radios in the cars
- cars ID as 21 to 29 (Offical is 82-82_)
- Princeton PD is also Dispatched
- cars ID as 82-83_
- Port Bryon PD,IL is Also Dispatched
- cars ID as Mary 80 to Mary 89

Kansas----------

More from Richard Canon KS-21

Police	Shawnee	460.175	
		460.075	(secondary)
	Overland Park		
		460.500	North
		460.375	South
Prairie Village & Misson Hills		453.625	
	Olathe	453.825	
Bonner Spring		155.565	
	Leawood	453.950	

Maybe He can send unit IDs and any special notes about the above

Nebraska----------

The following is more from E.J. Berryman NB-7,with notes that took while on two trips through that State in 81,

Nebraska State Patrol

Dispatch	42.46	42.30	BM
unkown		42.20	MO

the patrol uses remote repeater of the Lowband pair with freqs in Highband & UHF, I have heard is in OSHKOSH on 154.695 ED.

car to car 42.46 (out of order,sorry ED.)

Statewide,These Three Freqs are assigned to each county as Police 39.90, Fire 39.98, EMS 39.82
But use is not strict in more rural areasof the state
Kearney can repeat any two on the other.
Nebraska State Patrol Troop Locations
State HQ Lincoln

Troop A OMAHA
B Norfolk
C Hastings
D North Platte
E Gering

The State Highway Map shows locations of Offices at McCook,Holdrege

Lincoln, NB
Police 1 460.075 RP Dispatch (north ? ED)
2 460.200 RP (south ? ED)
3 460.450 RP (Detectives ? ED)
4 460.175 RP
- 155.250 RP Animal,Parking Control,& Mics ED
Fire 460.575 BM
460.625 BM

Universty Of Nebraska
Police 460.125 RP
Lancaster County
39.82,39.90,39.98
154.755 RP County Police
State Prison
158.820 RP
NB Dept of GAME & PARKS
159.330 RP (151.205 in)
(Known transmitter sites Alliance,North Platte,Grand Island,Lincoln and Omaha.ED) (dial encoder used to access rp after hours)
NB State Highway Commission
47.08 & 47.20 (does any one known Districts and freq use ED.)

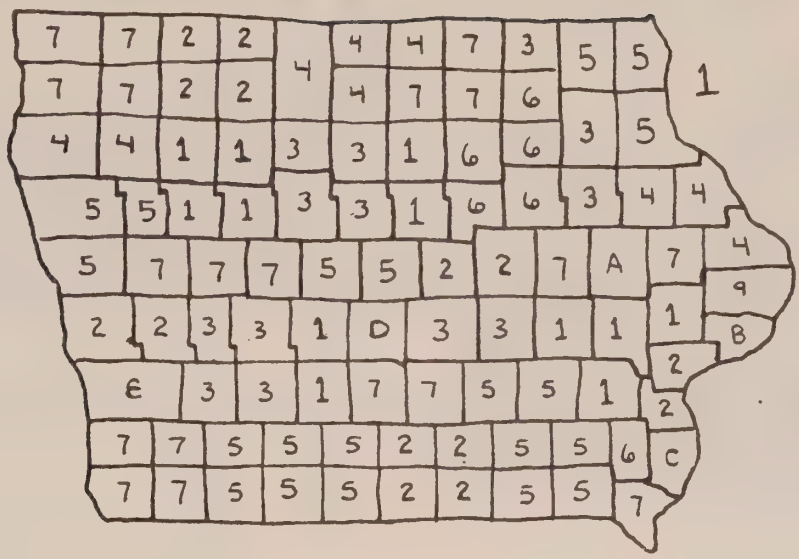
To Finish out the Column is three maps I made up to show the IOWA POLICE TELECOMMUNICATIONS PLAN

MAP 1 Channel 1 Operations BM
1 154.725 2 154.830 3 154.845
4 154.860 5 155.010- 6 155.070
A 155.190B 155.910M 7 155.190
B 156.210
C 460.350 RP
D 154.815 RP
E 154.860 RP

Map 2 Channel 2 Information Base Channel
(mobile on 155.910 except 5A 155.415 m
6A 155.415 m
6B is 155.610 BM
1 155.250
2 155.310 2A 155.310 RP (part time)
3 155.520
4 155.535 4A 155.535 RP (part time)
5 155.580 5B 155.580 RP
6 155.610

Map 3 shows the County Prefix for unit Numbers

Until Next Month
Michael Schu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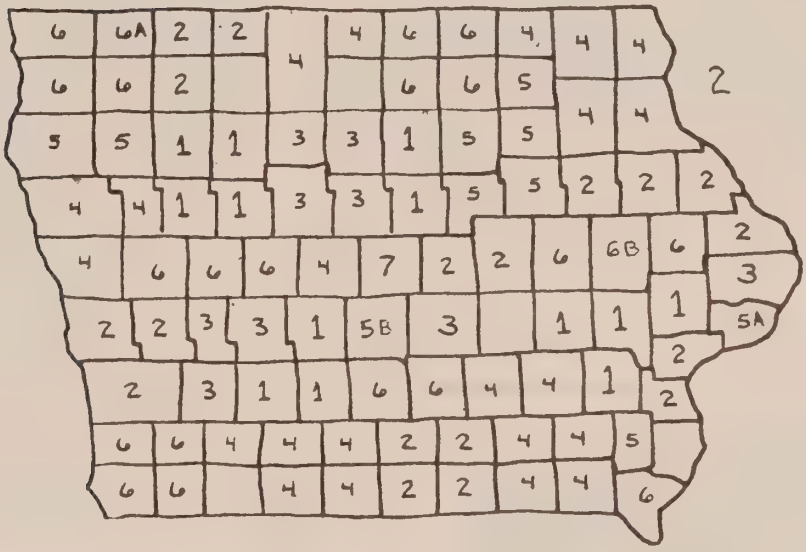
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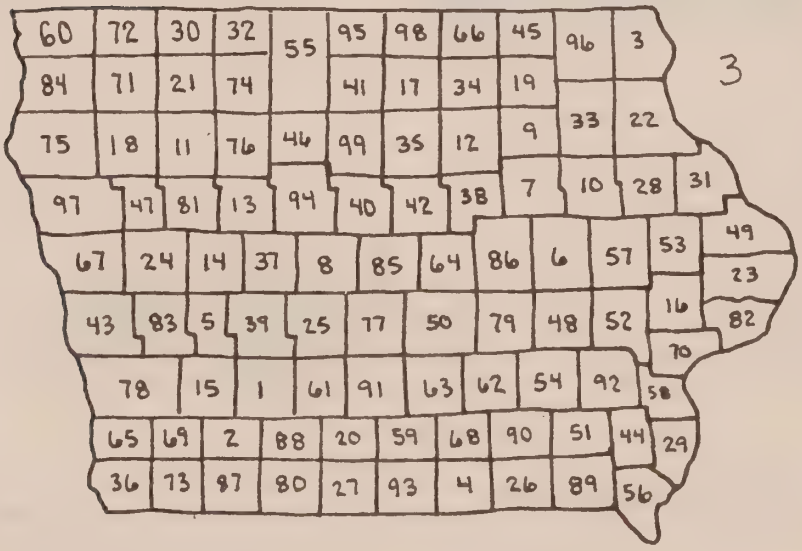
3

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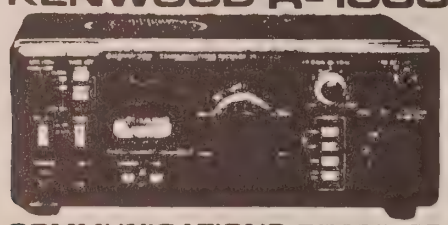

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REGENCY M100 & M400 beep elimination **$19.95**

REGENCY M100 & M400 beep elimination switch **$35.00**

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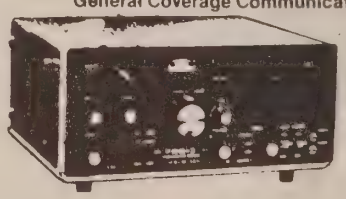

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Welcome to the October 1982 issue of Public Safety-Califonia

From DAN (CA-LA-359):

POLICE DEPARTMENT-City of Los Angeles

The LAPD South Bureau has made the conversion from the VHF-Hi frequencies to the ROVER radio system. In addition to the South Bureau conversion, there is an additional change involving the Valley Bureau ROVER. Again, the notes are listed from the Southern California Edition of POLICE CALL - 1982:

ROVER CHANNEL	FREQUENCY	NOTES	STATION LOCATION
1	507.2375	R *	#12-77th Street
2	506.7875	R **	#3-Southwest South Traffic Div.
3	506.9875	R ***	#5-Harbor #18-Southeast

NOTES:

R	indicates repeater operation on this frequency
*	POLICE CALL shows as ROVER-3
**	POLICE CALL shows as ROVER-1 (Southeast)
***	POLICE CALL shows as ROVER-2 (Southwest)

There still is some simulcastings of radio calls on the VHF-Hi base frequency (159.180 Mhz).

ROVER-5 (507.2625 Mhz) is now assigned for tactical purposes. The Valley Traffic Division has been reassigned from ROVER-5, to Valley ROVER-2, with the Van Nuys Station (Refer to the

April 1982 Newsletter - page 69 - for Valley ROVER listings).

ROVER-6 (506.8125 Mhz) is still being used for transmitter testing purposes during the daylight hours.

ROVER-7 (507.0375 Mhz) is still assigned to the Rampart Station. No change in the Central Bureau ROVER listings. Refer to the August 1981 Newsletter (page 58) for the Central Bureau listing.

As of this writing (07-11-82), the West Bureau is still using the VHF-Hi frequencies. However, there has been some radio testing of the West Bureau ROVER frequencies. So it should not be too long before the West Bureau converts to ROVER.

----------30----------

The 1981 Status Report on 155.475, the National Law Enforcement Emergency Channel, was reprinted by permission from APCO, Aug. 1981. It was omitted only because the chart just did fit on two facing pages. This appeared last month, Sept., 1982 in the Calif. column.

From NEAL (CA-LA-385): Two maps of California's 58 counties which will be printed later due to space limitations. Speaking of Calif., U.C.L.A. police cars are sporting 800 mhz. antennas. Would anyone know about this? Also, would anyone be willing to submit freqs. for the Official Police Garages (impound)? I have found one:

Fox Tow 157.500 Van Nuys

From an anonymus member is this update on CHP freqs. as of June 1982. The list of numbers and stations for the CHP listed on pages 40 & 41 of the October 1980 issue of the RCMA newsletter is correct. Here are freq. changes that have been made and are in effect at this time:

47 Woodland to Black Channel
112 S. Sacramento to Black Channel
103 Tracy to Yellow Channel
48 Modesto to Yellow Channel
97 Banning to Red Channel
26 Santa Cruz to Blue Channel while Black is being installed for main Channel
75 San Bernardino to Copper Channel
101 Arrowhead to Copper Channel

I recently found some old notes of mine and thought I'd share them with other members. In 1964 the CHP had six (yes 6) pairs of freqs. plus the IOR (inter-office radio, which has been replaced by the "Green Phone" lease lines). Here are the channels of yesteryear:

Color	Base	Mobile
Yellow	42.12	42.28
Blue	42.34	42.18
Red	42.44	42.28
Green	42.54	42.24
Orange	42.56	42.28
White	42.56	42.72
IOR	45.86	

Then in 1965 the CHP began expanding its radio system by adding the Gold channel. The rest is history.

ALAMEDA CO.

(Gerry CA-SL-005)

SHERIFF

yellow	155.250 main	State law net	155.67 - 155.71
green	155.070 mutal aid	Clemar	154.92
purple	155.130 tec.		
orange	453.75 intercommunication		

Beat Car's

30-32	San Leandro
33-34	Ashland
35-37	Castro Valley
38	Floater beat car
40-45	Crime Prevention (unmarked cars with uniform sheriff)
50-55	East Alameda Co. (Sunol, Dublin, unincorperated sections)
59-61	Reserves

SF-1 - SF-4	FBI (work on yellow sometimes)
4T4 - 4T3	Fed Treasury

Alameda Co. Fire Depart.

station	number	Freq. main	sec.	mutal	others
Alameda Co.	2	154.235	154.070	154.280	
OES	1	154.070		"	
Alameda City	4	154.130		"	
Albany	1	154.385		"	
Ashland	1	154.070		"	
Berkeley	7	154.190		"	
Castro Valley	3	154.070		"	
Cherryland	1	154.070		"	
E. Bay Regional Pk.	5	44.64	"	"	
Emeryville	2	154.070		"	
Fairmont	1	154.070		"	
Fairview	1	154.070		"	
Fremont	8	488.3625	"	"	488.012 488.4125
G. E. Vallecitos	1	154.235	153.080	"	
Hayward	6	460.600	154.070	"	
Lawrence Berkeley	1	164.375		"	
Lawrence Livermore	2	154.325		"	
Livermore	4	154.235	"	"	
Newark	3	154.070		"	
Oakland	28	154.355	153.785	"	
Oakland International	1	453.900		"	
Piedmont	1	154.070		"	
Pleasantion	3	154.235	154.070	"	
San Leandro	5	154.070		"	
San Lorenzo	1	154.070		"	
Santa Rita	1	154.235		"	
Tennyson	1	154.070		"	
Union City	2	154.070		"	
Valley Community(Dublin)	2	154.235	154.070	"	

Dispatch freq. 33.92

From Milt (CA-SD-025):

Some of the most intriguing information comes from highly public sources and (as is the case here) from documents distributed by the same sources that it's difficult to get information from at times. The following is from the

City of San Diego's "Request for Proposal for Consulting Services to Study the City's Radio Communications System."

The City's Police and Fire Department radio systems operate on multiple frequencies and from fifteen different transmitter and receiver sites. All of these sites are interconnected by leased telephone lines and microwave links (more about this system in a later issue). All dispatching is done from the City Operations Building (1222 First Avenue).

Transmitter/Receiver Locations:

1 - City Operations Building (1222 First Avenue)
2 - Soledad Mountain
3 - Woodson Mountain
4 - Lyons Peak
5 - University Heights (Idaho St. & El Cajon Blvd.)
6 - Chollas Station
7 - San Ysidro
8 - Pt. Loma (Catalina Blvd. & Mills St.)
9 - 33rd and Cedar Streets
10- Mission Valley (Cromwell Place)
11- Country Club Heights (La Jolla)
12- Ocean Beach Pier
13- Encanto Reservoir (Aviation Drive)
14- Cowles Mountain
15- Black Mountain

Key to following:

T = Transmitter R = Receiver * = Future Installation

example: 8T,R* = Transmitter and Future Receiver at Pt. Loma

San Diego Police Department

Channel	Base	Mobile	Transmitters/Receivers
1	158.730	154.950	1TR,2R,3T,4R,5TR,6R,7TR,8R,9R,13R
2	158.970	155.550	1TR,2TR,3TR,4TR,6R,7T,8R,10R,11R, 12R, 14R*,15R
3	159.090	154.875	1TR,2R,3T,4R,5T*R,6R,7R,8TR,10R, 14R,15R
4	159.045	155.535	1TR,2R,3R,4R*,5T*R,6R,7T,8T,9R, 15R
5	158.895	155.370	1TR,2T*R,3T,5R,8TR,10R*,11R*, 12R,14R,15R
6	154.055	154.650	
CLEMARS	154.920	154.920	1T,2R,3R,5R,6R,7TR,8TR,
Inquiry	154.785 (158.910)	154.785	1T,2TR,3TR,4T*R,5R,6R,7R,8R, 11R*,14R*,15R
Tactical	155.685	155.685	1T,2TR,3T,4R,5TR,6R,7TR,8R,9R, 10R,13R,15R
Detective	154.725	154.725	1T,2R,3R,5R,6R*,7T,8T,10R,12R*,15R

San Diego Fire Department

1	154.310	154.310	1T,2T,3T,4T,5R,6R,7T,8R,10R, 11R,12R,13R,14R
2	154.145	154.145	1T,2T,3T,4R*,5R,6R,7T,8R,10R, 11R, 13R
3	153.785	153.785	1T,2T,3T,5T,6R*,7T,8R,11R,12R*, 13R,14R,15R
8	154.085	154.085 (154.965)	1T,2T,3T,4R,5T,6R,7T,8R,10R,12R, 14R,15R
White	154.280	154.280	1T,2R*,3T,4T*,5R,6R*,7R,8T*,10R*, 13R*,14R*,15R
Red	155.085	155.085	1T,2R*,3T,4R,7R,8T*

Police Department Channels 1-5 are area operations; Ch.6 is future area operations. Fire Department Ch. 1 is Dispatch, Ch. 2 is Data and back-up fireground, Ch. 3 is Paramedic, Ch. 8 is Fire Response and Operations, White is Statewide Mutual Aid, Red is San Diego County Mutual Aid.

Police Dept. Inquiry and Fire Dept. Ch. 8 will change to duplex (repeater) operations in future. New frequencies shown in ( ).

LOS PADRES NATIONAL FOREST

first digit indicates district:

1) Supervisors office (Goleta)	KME-21
2) Monterey (King City R.S.)	KMB-737
3) Santa Lucia (Santa Maria R.S.)	KMB-734
4) Santa Barbara (Los Prietos R.S.)	KMB-736
5) Ojai (Ojai R.S.)	KMB-738
6) Mount Pinos (Chuchupate R.S.)	KDZ-310

primary transmitter sites by district:
Monterey - Anderson Pk., Calandra Pk.
Santa Lucia - Tepesquet Pk., Tassajera Pk.
Santa Barbara - Santa Ynez Pk.
Ojai - Sisar(Hines Pk.), Torry Hill
Mount Pinos - Frazier Mtn.

frequencies:
CH.1 - 170.550 direct
CH.2 - 169.900 in/170.550 out
CH.3 - 170.475 direct (service net)

411.325 - Los Padres dispatch(Goleta) transmit uplink via directional beam to mountain top sites.
415.325 - downlink from Calandra, Sisar and Santa Ynez to VHF(170.550). Los Padres dispatch receive.
412.400 - Santa Ynez Peak downlink (appears to repeat radio traffic from Los Padres dispatch and all districts except Ojai and Mt.Pinos)
411.525 - South Zone Net, LosPadres transmit, uplink
415.525 - South Zone Net, Santa Ynez and Frazier downlink
166.5625- South Zone Net, Santa Ynez Pk. transmit, from 411.525 Los Padres dispatch.
164.9125- South Zone Net, Frazier Mtn. repeater

415.475 - South Zone Net, Frazier Mtn. downlink
411.550 - Air dispatch, Los Padres dispatch,uplink
415.550 - Air dispatch, Santa Ynez Pk. downlink to VHF(168.625) Los Padres dispatch receive.
168.025 - Air dispatch, VHF input
168.625 - Air dispatch, VHF output(Frazier and SantaYnez)
166.675 - Air Tactics F-1
170.000 - Air Tactics F-4 (ground-air)
118.950 - Air to air (AM "Victor")

aircraft available:	base:
Tankers 93 and 96	Hollister
Tanker 67	Goleta
Tankers 86 and 87	Paso Robles
Tankers 123 and 127	Fox Field-Lancaster
Air Attack 07	Goleta
Air Attack 530	Paso Robles
Helicopter 527	Arroyo Grande
Helicopter 529	Rose Valley
Helicopter 530	Chuchupate

fire engine locations: (incomplete list, readers help !)

27 Pacific Valley
31 Pozo
32 La Panza
38 Figueroa
40 Los Prietos
41 San Marcos Pass
44 Rincon
53 Temescal
60 Chuchupate
61 Apache Saddle
63 Gold Hill
66 Ozena
There are many other locations which I have been unable to determine. Additions and corrections requested and appreciated. RON MURRAY (CA-VE-013) 3650 Schooner Walk, Oxnard, Calif. 93030

Riverside City Fire Department

Frequency: 460.575
460.600 - Dispatch

Station 1	3420 7th St	Engine 1, Truck 1, Squad 1, Brush 1, Battalion 1.
Station 2	9449 Andrew	Engine 2, Truck 2, Squad 2, Brush 2, Battalion 2.
Station 3	6395 Riverside	Engine 3, Truck 3, OES 143.
Station 4	3510 Cranford	Engine 4
Station 5	6953 Streeter	Engine 5
Station 6	2293 Main St	Engine 6
Station 7	10191 Cypress	Engine 7
Station 8	11076 Hole	Engine 8, Tanker 8
Station 9	6674 Alesandro	Engine 9
Station 10	2590 Jefferson	Engine 10

Reserve engines at station 1,6,7.
Radio equipment check, each morning 7:30 AM.

ED CA-RI-13

A Riverside Area Fire Buff Associates is being formed.
Meet 2nd Thursday each month at various fire stations.
Information from Dorothy Peglow 714-359-8300.

Until next month, happy monitoring.

****

PUBLIC SAFETY WEST

PUBLIC SAFETY - WEST

Send Public Safety and Special Emergency frequencies, radio system details and questions for Alaska, Arizona, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington and Wyoming to:

George Hoggatt, 17473 E. 16th Drive, Aurora, CO 80011.

It's time to write the old column again. Gee how time flies when you're having fun. How was your summer? Good I hope. I had big plans to get out this summer and find out what those new radio systems were being used for. I've tried twice and both times have had car trouble before I got out of town. That's what I get for buying a new car. I did get out a little in spite of the trouble so it is not all lost. Besides, next week, the State (my employer) is sending me on a four day tour of the southwest part of the state, all expenses paid. Should have some good information for next month.

This month I'm going to proof-read this before I mail it. As you can see, I failed to do that for the August issue. Really, I do know that the word for a single item is ONE. I also know that piece does have an "e" on the end.

Richard Avery (CA-AL-020) Would like to form a regional chapter. If you are interested drop him a card or letter at 350 S. 400 West #3, Richfield, UT 84701.

Carl J. Gerosa (NY-117) received an Arizona station via "skip". KTI579, 39.340 MHZ. It is licensed to the State of Arizona in Tucson. Can anyone add any info as to it's use? Send it to me and I'll forward it to Carl and print it here.

Kent Haycock is looking for information on the UTAH state Fish and Game, Utah state Parks and Utah state Forestry (fire). Again send it to me and see it in this spot.

Gene Sawyer Jr. (CA-SN-004) has answered the question in the July issue about Steamboat Springs, Colorado interfering with the Rock Springs Wyoming Police. Routt County Colorado Sheriff's office identifies it self as Steamboat. They transmit on 155.370 from a remote site on Hahns Peak at an elevation of about 9000 feet above sea level. Since there are no higher mountains between Rock Springs and Hahns Peak, they have a good shot to Rock Springs' repeater which a has an input of (guess what?) 155.370. Gene also says that Salt Lake City suffers from a similar problem on 460.100. Can anybody identify the source? If so send it along.

++

In the August issue there was a list of Denver Fire stations and equipment. Wouldn't you know it, they changed the equipment. Also I used two abbreviations that might not have been as clear as they should have been. RP is a Reserve

Pumper and RT is a Reserve Truck. The Reserve equipment moves more than any other, so they can (and do) change from day to day. Now for the changes:

Station 1 houses the CD Rig (Civil Defense) in addition to the equipment shown.
Station 6 delete pumper6 and add Reserve Squad 1
Station 9 houses pumper and truck 9
Station 14 no longer has a Reserve Pumper
Station 20 has a Reserve Pumper called RP20 or RP28
Station 21 has a Reserve Pumper sometimes
Airport Station 1 sometimes has the list shown and sometimes the equipment identifies as Red 1, 2, 3, 6, Reserve Red 1, Reserve Red 2 but not all on any one day.
Likewise, Airport Station 2 may be as shown, or Red 4, 5, 7

A few additional notes on Denver Fire: a "U-fer" is a Uniform Fire Report. "Make a fire of it" means that flame and/or smoke is showing and a full response is needed. A Photo Car is a trained investigator to take pictures when there is an injury, death or arson.

UTAH Gene Sawyer Jr. (CA-SN-004), Richard Avery (CA-AL-020), Kent Haycock (CA-SZ-004) and The Eavesdropper's Guide to UTAH.

The latter is a new publication (P. O. Box 808, West Jordan, Utah 84084). Looks good, but since I know nothing about Utah, I can't testify as to it's accuracy. I don't normally give free ads but when they give permission to use any or all of it in the column, I feel that is worth a mention.

Utah Highway Patrol

Channel 1 Statewide channel - 155.505
Channel 2 Local Operating Channel (see map)
Channel 3 155.745 Car-to-car

Division Headquarters

1	Logan/Brigham City	UHP/Sheriff dispatch
2	Ogden	UHP dispatch
3	Farmington/Tooele	UHP/Sheriff dispatch
4	Salt Lake City	UHP dispatch
6	Orem	UHP dispatch
7	Coalville	UHP/Sheriff dispatch
8	Vernal	UHP/Sheriff dispatch
9	Price	UHP dispatch
10	Richfield	UHP dispatch
11	Cedar City	UHP dispatch

In Division 10 (Richfield) the dispatch at Richfield has three remote transmitter sites - White Pine 9.5 miles NW, Monroe Peak 15.25 miles south and Barney Top 11 miles east of Escalante. They are all repeaters with output on the division channel (155.595). The Richfield office controls them via a combination of UHF and microwave.

White Pine - the uplink is 462.400, the down link is 467.400 to/from Richfield
Monroe Peak - the uplink is 1876, the down link is 1925 to/from Richfield
Barney Top - the uplink is 462.475, the down link is 467.475 from Monroe Peak then into the microwave.

Other Utah State

BASE	MOBILE	TYPE	REMARKS
158.895	158.895	somplex	unknown use
155.805	155.805	simplex	USU Water Lab and Utah Geological Survey
155.775	155.755	simplex	Fish and Game (alpha units) also on UHP Ch. 1
151.415	159.285	repeater	State Forestry also on UHP Ch. 1
155.025	155.985	repeater	State Civil Defense, Salt Lake EOC
155.340	155.340	simplex	Statewide ambulance to hospital
47.460	47.460	simplex	National Jeep Search and Rescue
47.040	47.040	simplex	Utah Department of Transportation

SALT LAKE CITY

460.100	465.100	repeater	ch. 1 East
460.150	465.150	repeater	Ch. 2 Central
460.200	465.200	repeater	Ch. 3 West plus City of West Valley (Valley units)
460.300	465.300	repeater	Ch. 4 Information, license checks
460.375	465.375	repeater	Ch. 5 Car-to-Car
460.050	465.050	repeater	Ch. 6 Administration, detectives
154.430	154.430	simplex	Fire Ch. 1 dispatch
154.310	154.310	simplex	Fire Ch. 2 rescue and administration
153.920	153.920	simplex	Parks and Engineers
155.100	155.100	simplex	Parking enforcement
158.835	158.835	simplex	Water Department
453.875	458.875	repeater	Salt Lake International - maintenance
155.715	155.715	simplex	Animal Control
153.800	153.800	simplex	Salt Lake International - construction

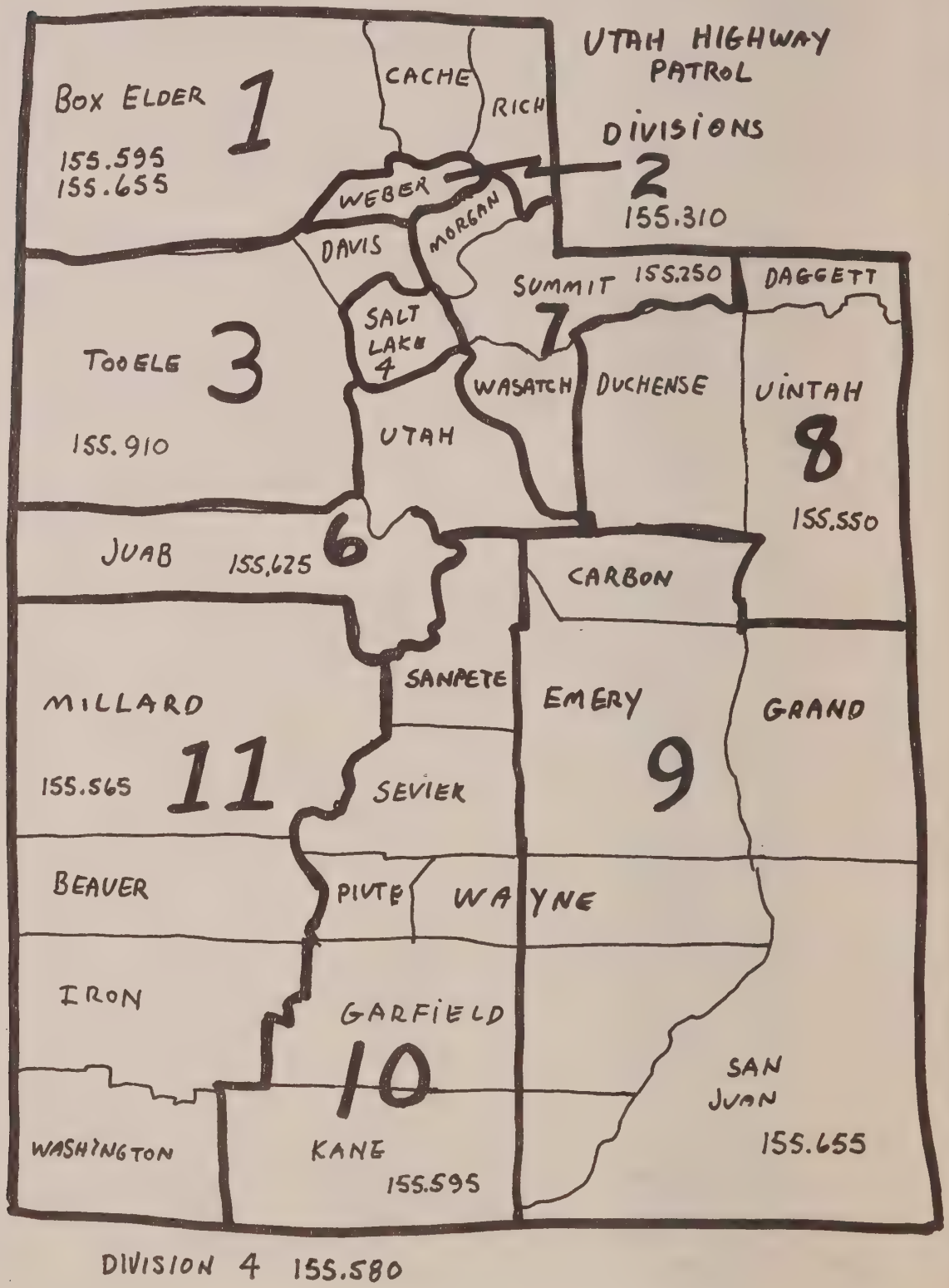
SALT LAKE COUNTY

154.650	154.650	simplex	freq. 1 East (Search and Rescue units tone dispatched)
154.785	154.785	simplex	freq. 2 Central
155.370	155.370	simplex	freq. 3 West
155.160	155.160	simplex	Search and Rescue ch. 2 (SR units)
46.060	46.060	simplex	County Fire
158.820	158.820	simplex	Buildings and Zoning plus Civic Auditorium
45.280	45.280	simplex	County Detention Home
158.865	158.865	simplex	County Surveyor plus Salt Palace Security
45.160	45.160	simplex	County unknown
45.440	45.440	simplex	County Health

OTHER UTAH

460.425	465.425	repeater	Murray City Police
460.450	465.450	repeater	Murray City Police
453.400	458.400	repeater	Murray City Local Govt.
155.640	155.640	simplex	Davis County Sheriff
155.685	155.685	simplex	Davis County Sheriff
154.710	154.710	simplex	Utah County Sheriff Ch. 2
154.860	154.860	simplex	Utah County Sheriff Ch. 1 155.745 Ch. 3
155.610	155.610	simplex	Wasatch County
460.075	465.075	repeater	South Salt Lake City Police
460.350	465.350	repeater	West Valley City Police
460.625	465.625	repeater	West Valley City Fire
155.130	155.130	simplex	Farmington City Police
155.670	155.670	simplex	Bountiful Police
154.205	154.205	simplex	Bountiful Fire
155.955	155.955	simplex	Sandy City Police
154.385	154.385	simplex	Sandy City Fire
154.830	154.830	simplex	South Jordan Police
155.865	155.865	simplex	Weber County Sheriff
154.725	154.725	simplex	University of Utah, Salt Lake City
154.965	154.965	simplex	North Salt Lake Fire
155.955			Midvale Police
159.150			West Jordan Police
154.355			West Jordan Fire
154.995			Alta Ski Area and Town of Alta
453.675	458.675	repeater	Granger Water District
461.175	461.175	simplex	Gold Cross Ambulance
461.125	461.125	simplex	LDS and Primary Childrens Hospital, security and Lifeline Helicopter dispatch
450.0875	455.0875	repeater	KUTV engineering and SKY 2 Helicopter

The Sky-2 helicopter has been heard on about all frequencies in the Salt Lake area. They were on UHP Statewide 1 during a brush fire as well as BLM and state frequencies. They have also been heard on city and county fire and search and rescue frequencies. During a crash into the stands at a local race strip, they were heard on the police frequencies. They have taken part in rescues from the cliffs of the Wasatch Mountains and have been asked to act as a spotter and ferry during a recent brush fire by the BLM. (Gene Sawyer Jr.)



LOCATION CODES

SANPETE COUNTY

ALPHA 1 SHERIFF'S OFFICE
ALPHA 2 POLICE DEPT.
ALPHA 3 TRAVEL INN
ALPHA 4 CANYON INN
ALPHA 5 ROGER'S CAFE
ALPHA 6 SPORTSMAN CAFE
ALPHA 7 CITY CAFE
ALPHA 8 EMBERS
ALPHA 9 COW PALACE
ALPHA 10 KAY'S CAFE
ALPHA 11 WARM CRK RANCH
ALPHA 12 WISTERIA
ALPHA 13 BRIGHT SPOT
ALPHA 14 JUVENILE COURT
ALPHA 15 MANTI MOTEL

WAYNE COUNTY

CHARLIE 1 SHERIFF'S OFFICE
CHARLIE 2
CHARLIE 3 KNOTTY PINE
CHARLIE 4 AQUARIUS
CHARLIE 5 SUNGLOW
CHARLIE 6 RIM ROCK
CHARLIE 7 CHUCKWAGON
CHARLIE 8 BRIDAL BIT

PIUTE COUNTY

DELTA 1 SHERIFF'S OFFICE
DELTA 2
DELTA 3 BIG ROCK CANDY
DELTA 4 HOOVER'S
DELTA 5 GRUB STEAK
DELTA 6 SMOOT'S
DELTA 7 JUNCTION CAFE
DELTA 8 PIUTE CAFE
DELTA 9 CIRCLEVILLE CAFE

SEVIER COUNTY

BRAVO 1 SHERIFF'S OFFICE
BRAVO 2 POLICE DEPT.
BRAVO 3 DAY & NITE CAFE
BRAVO 4 BRANDING IRON
BRAVO 5 MOM'S CAFE
BRAVO 6 SAFARI CAFE
BRAVO 7 SHAHEEN'S CAFE
BRAVO 8 WASATCH CAFE
BRAVO 9 B. J. CAFE
BRAVO 10 BEST WESTERN
BRAVO 11 RODEWAY
BRAVO 12 GRAND WESTERN
BRAVO 13 MINI MALL
BRAVO 14 STEVE'S CAFE
BRAVO 15 LITTLE WONDER
BRAVO 16 CATTLEMAN'S

GARFIELD COUNTY

ECHO 1 SHERIFF'S OFFICE, PANG.
ECHO 2 POLICE DEPT.
ECHO 3 SHERIFF'S OFFICE, ESCAL.
ECHO 4 ALLAN'S DRIVE INN
ECHO 5 BRYCEWAY
ECHO 6 COUNTRY CORNER
ECHO 7 FLYING M
ECHO 8 WANDER INN
ECHO 9 DOUBLE D
ECHO 10 N. BRYCE
ECHO 11 PINK CLIFFS
ECHO 12 RUBY'S INN
ECHO 13 GRANDMA GRUNTS
ECHO 14 GALAXY

ROAD AND WEATHER CODES

CODE

(USED BY U.D.O.T.)

47.04
47.16

1 CLEAR
2 OVERCAST
3 WIND
4 FOG
5 DUST
6 POOR VISIBILITY
7 RAIN
8 HAIL
9 LIGHT SNOW
10 HEAVY SNOW
11 GROUND BLIZZARD
12 SNOWSLIDE
13 ROAD CLOSED
14 WET
15 DRY
16 ICY
17 ICY IN SPOTS
18 SNOWPACKED
19 SNOWPACKED IN SPOTS
20 SANDED
21 SLUSHY
22 SLUSHY IN SPOTS

155.430			Box Elder County Sheriff
460.500	465.500	repeater	Ogden Police
154.250			Ogden Fire
155.190			Provo Police Ch. 2 main dispatch
155.010			Provo Police Ch. 1
154.190			Provo Fire
155.430	155.430	simplex	Orem Police
154.145			Orem Fire
155.535			Springville Police
154.415			Springville Fire

IDAHO Kent Haycock (CA-SZ-004)

Bannock County Sheriff 460.050
Pocatello City Police 460.175
Pocatello City Fire 154.190

NEVADA Kent Haycock (CA-SZ-004)

Highway Patrol 42.880 Reno Area
42.940 Statewide
Washoe County Sheriff 155.520
Sparks City Police 155.130
Nevada Division of Forestry 158.895

MISSOULA MONTANA AREA (Gene Sawyer (CA-SN-004)

Base	Mobile	Service	Type	Remarks
39.940	39.940	PP	BM	Missoula City Police
39.820	39.820	PP	BM	Missoula Sheriff ch.1
39.880	39.880	PP	BM	Missoula Sheriff ch.2
39.520	39.520	PP	BM	Missoula Sheriff ch.3
39.900	39.900	PP	BM	Montana Highway Patrol
39.920	39.920	PP	BM	Montana Highway Patrol
154.920	?	PP	RP	Montana Highway Patrol
154.430	154.430	PF	BM	Missoula City Fire
46.060	46.060	PF	BM	Missoula Rural Fire
155.385	155.385	PM	BM	Fire and hospital net
155.280	155.280	PM	BM	Ambulance
155.220	155.220	PS	BM	Search and Rescue
155.820	155.820	PL	BM	Missoula County Gvt.
154.040	154.040	PL	BM	Missoula City Gvt.
154.100	154.100	PL	BM	Missoula City Gvt.
155.940	155.940	PL	BM	Montana State Gvt.
151.175	?	PO	RP	Montana State Forestry
151.475	?	PO	RP	Montana State Forestry
164.700	?	PO	RP	Lolo National Forest
168.625	168.025	PO	RP	USFS Air Dispatch
171.425	?	PO	RP	USFS Lookouts to Air
170.750	?	PO	RP	USFS Region 1 Net
158.130	158.130	IW	BM	Montana Power
47.040	47.040	PH	BM	Montana Highway Maint.
162.400	?		RP	National Weather Service
160.770	160.770	RR	BM	Milwaukee Road road ch.
161.100	161.100	RR	BM	Burlington Northern road ch.
161.010	161.010	RR	BM	Burlington Northern yard
160.980	160.980	RR	BM	Burlington Northern ch.2

QST QST QST QST QST QST QST

CALLING ALL RCMA AMATEUR RADIO OPERATORS

The ARRL regional elections are coming up in October. Our own attorney, Joe Merdler, is running for office, and we urge your support.

JOE MERDLER is a true friend of RCMA and fellow radio enthusasts. A UCLA graduate, Joe Merdler works closely with the FCC and anti-interference groups to rid our airwaves of jammers of malicious interference.

Joe also assists the radio community with antenna ordinance problems, RFI complaints, and other related amateur radio legal problems that a ham might run into.

Joe is an active radio monitor buff with a Bearcat 100 and 300 running almost constantly by his side. He also is a reserve police officer, and knows the value of scanner radios and private monitoring.

Joe will be running for ARRL vice-director for our local Southwestern Division.

"I'm not afraid to express an opinion to the League when needed" comments Joe.

If you are a radio amateur and a current ARRL member, plan to vote in October. RCMA attorney Joe Merdler will appreciate your support.

RCMA STAFF

SPECIAL NOTE FOR SOUTHERN CALIFORNIA RCMA MEMBERS.....

Gordon West, editor of CB RADIO TIMES, indicates the publication is temporarly suspending publication.(which includes S-9 subscriptions)

More details next month regarding subscription fullfillment.

Local RCMA members may be interested in purchasing,below manufacturer cost, equipment (scanners, CB's, antennas, radar detectors, TV decoders, un-scramblers, power amplifiers, cordless phones, etc) that Gordon has on hand after lab-reviews.

Most equipment is new, in the box, and carries full factory warranty. RCMA members may call Gordon at 549-5000 for more details.

Well that's all folks. A very good month. Over six pages. KEEP UP THE GOOD WORK!

This month I received another letter from a member who feels that he cannot contribute anything of value. I don't know how I can convince the doubters that your information IS important. I want to travel around and listen to the stations that you may listen to every day. You could save me the gas if you would just send in your data. I want this column to be the best in the magazine but I can't do it all. If every member would send me just one frequency a month, I would have a full column. In the case where I get the same information from more than one person, I'll give credit to all. That's where the great Utah data came from this month.

The only thing that I get and can't use is data from services covered by other columns. If I could use all of the business and government data that came in with what I used, we sould have had 8 or 10 pages. I would like to use it but I can't. It just isn't fair to the other editors. I did let a little slip through this month because Gene's was typed just right and I couldn't see re-typing it. But that is the exception, not the rule. What I have will be forwarded to the proper editor.

If you have sent in data and it hasn't appeared, let me know. I am still having mail problems.

If you happen to be in the Denver area, give me a call. I would like to talk and if possible meet you. My home phone is (303) 341-9236, work is (303) 757-9322.

'Till next month. Doug

PAID ADVERTISEMENT

PUBLIC SAFETY - SOUTH CENTRAL:

Send Public Safety and Special Emergency frequencies, radio system details, and questions as follows — Alabama, Arkansas, Louisiana, Mississippi, Tennessee, Oklahoma, and Texas:

Ken Pehl, 108 E. Centre St., Fredericksburg, Texas 78624.

Welcome to this South Central edition of the column. I have a few comments to make before jumping into this month's material.

I received word from the leaders of the RCMA-DFW Chapter concerning plans to expand the "Scanning DFW" bulletins to a regional newsletter similar to the RCMA national newsletter, covering all-wave listening. Plans are still tentative. If you are interested in further details of these plans as they develope or on how to receive this "Scanning Texas" (tentative working title) newsletter, send your inquiry and a Self-addressed Stamped Envelope to : RCMA-DFW Chapter, c/o Larry Van Horn, 1111 N. Carrier Parkway, #B-107, Grand Prairie, TX 75050.

The July RCMA Newsletter had barely been out when reaction started coming in to my column's contents. It appears that the "Monitoring Arkansas" article by Russell Brummett, AR-3, was a popular hit with the Arkansas members, even before the entire series had run. A few requests for the full size travel map of Arkansas also were received. I need to apologize for the lack of access to a really good copier for better clarity. Hopefully those who did get my copies can make out with them. An equally popular feature with Texas members was the series of articles on Texas Counties Radio Systems. I kind of liked it myself. As further input comes in you will be seeing more of these features in the future. (Didn't I always tell you to send me your reports on local vacinity information? Other members are interested in your area, just as you are interested in their area.)

Turning now to the material for this month, hitting first upon the Texas scene. In an issue of the column recently, mention was made of a DPS ch. 8 active in the Houston area. Phil, TX-97, Ed, TX-45, and Bob, TX-76, of the Houston RCMA Chapter have provided us with a little more info; however, full details still elude them. Contrary to previous mention that DPS Ch. 8 was a repeater and also contrary to the info in the January, 1982 issue of the newsletter (p. 31a) that 156.210 was a control frequency used by the Houston DPS Communications office, information trickles in that DPS Ch. 8 in the Houston area <u>is</u> 156.210 and is used <u>simplex</u>. The information I have been given is that this is the North Harris Co. Dispatch ch. with only certain units in the 9230's series and North Houston L&W troopers equipped with the channel.

It appears some of the smaller DPS offices are now becoming equipped with TEX-AN. The larger metro area offices and some of the other DPS offices have had TEX-AN for quite a few years. TEX-AN (Texas Agency Network) is a telephone service system providing direct dialing between state agency offices and certain off-line locations on calls necessary for state business. Out of state calls cannot be made on this system. This system differs to an extent from the normal telephone service in that these are not toll calls as such. The total cost of the TEX-AN system plus all off-line toll calls made through the system is prorated among all user agencies based on the calculated amount of time each agency used this system during the billing period, as compared to a per time <u>and</u> distance charges on a regular telephone toll call. Note that TEX-AN is an all state agency inter-office communications system not just limited to DPS use.

While this TEX-AN system has nothing to do with radios as far as we monitorists are concerned, it does have an affect on the amount of radio activity that can be heard--particularly on Inter-city. I have noticed the decline in radio activity. Have you? In fact, it appears that all law enforcement agencies (at least in this area) are taking Section 90.419 of the FCC Rules and Regulations quite literally. This section, while in effect exempting

Public Safety and Special Emergency Radio Services' base stations below 450 MHz, restricts base to base radio communications to situations: a) where the messages are of importance to mobile stations; or b) when "wireline communications facilities" (translated = telephone) are not working, "economically impracticable", or not available for lease from the phone company. Furthermore, it states that for the purposes of this provision, a busy signal is not considered to be an inoperative condition. Simply put--base to base contacts by radio are not allowed unless phone lines are out or not otherwise available. I'm not really sure exactly what the phrase "economically impracticable" means but I can see many different interpretations of the situation. I imagine the state agencies are of the inclination to be oblivious to the phone budget. (I wonder--perhaps being somewhat paranoid --if the FCC got on anyone's case about this rule. Does anyone have any knowledge of that being the case? It may simply be an excuse to avoid eavesdroppers like us!)

Next up is a long awaited report on the Texas Department of Corrections (TDC) radio system. Being that this state agency has been very much in the news lately, it comes as a timely report. I would like to thank both Gary and Phil for their reports, which were consolidated to bring you this information. I hope everyone finds this as helpful and as interesting as I found it.

TEXAS DEPARTMENT OF CORRECTIONS
by Gary Fitts, TX-94, and Phil Porter, TX-97

The Texas Department of Corrections (TDC) operates the state's prison system holding adult felony offenders. The headquarters is in Huntsville. E. J. Estelle is the Director of the Department of Corrections. The TDC system maintains more than 100,000 acres of land broken down into 19 units (prisons) and houses some 34,000 inmates, making it one of the largest, if not the largest, prison system in the U.S. The prisons, called units, are divided into two divisions--northern and southern--determined by location and are mainly concentrated in the East Texas area, within approximately 75 miles of Huntsville. TDC has three (at least) support divisions: Agricultural, Construction, and Supply Divisions, which serve all prison units. There are four new prisons under construction at the present time.

The TDC radio system operates on the VHF-high band, with a repeater channel and a simplex intra-department common channel assigned to each prison unit. In addition, the prison units also have capability to operate on the Texas Inter-city channels (155.370-base & 154.950-mobiles), and select prison mobile vehicles are equipped to operate on the local area Sheriff Office freq. or the local PD freq., as needed for inter-agency contact or co-ordination. There is some evidence that a repeater talk-around mode is available, also (that is, operating simplex on the repeater output frequency). This latter detail is not totally confirmed, however.

TEXAS DEPT OF CORRECTIONS RADIO SYSTEM

Frequency	Xmtr location	Callsign	Units served (see abbrev. list)
Ch 1 154.995 R (153.965 in)	Huntsville	KFH 262	HV, GR, WY, DU
Ch 2 153.815 R (154.980 in)	Midway	KFH 296	FE, EA, E
Ch 3 154.950 mobile	Statewide inter-city mobiles		all TDC mobiles
Ch 4 155.370 base	Statewide inter-city bases		all TDC bases
Ch 5 153.905 B/M	TDC Common ch.		all TDC B/M
Ch 6 153.785 R (15 .025 in)	Tennessee Colony	KFH 287	CO, BE
" " " "	Gatesville	KFH 292	MV, GT, HT
Ch 7 153.815 R (154.085 in)	Sugarland	KFH 294	CE, JE I & II
Ch 8 153.755 R (155.025 in)	Sandy Point	KFH 293	DA, RA
Ch 9 153.785 R (15 .055 in)	Angleton	KFH 295	RE, CL
Ch 10 sensitive use freq.-- (ed. note: must limit per RCMA policy)			
Ch 11 Repeater talk-around ch.--freq various with repeater in use.			
Ch 12 Freq. various--local area S.O. or PD frequency			

The TDC radio unit numbers are a four digit number. The first two digits denote the unit or division served or assigned, while the last two numbers denote the type of unit or unit identification. Within each block of unit's series, certain ranks or units are:

xx01 = Unit Warden
xx02 = Asst. Unit Warden
xx03 = Major
xx04 = Farm Manager
xx08 = Unit's ambulance
xx09 = Patrol car

Abbreviation index
(ed. note: I made up these unit's abbreviation for the sake of condensing the information. These are not official designations.)

HV = Huntsville "Walls" Unit
GR = Goree Unit
WY = Wynne Unit
DU = Diagnostic Unit
FE = Ferguson Unit
GT = Gatesville Unit
HT = Hilltop Unit
CE = Central Unit
JE I & II = Jester Units I & II
DA = Darrington Unit
EA = Eastham Unit
E = Ellis Unit
CO = Coffield Unit
BE = BETO Unit
MV = Mountain View Unit
RA = Ramsey Units I & II
RE = Retrieve Unit
CL = Clemens Unit

PRISON UNIT DETAILS

Unit Name:	Location:	Base Callsign:	Div.:	Radio Unit Series:
Huntsville "Walls"	Huntsville, Walker Co.	KFH 262	N	2200's
Goree Unit	Huntsville, Walker Co.	u/k	N	2300's
Wynne Unit	Huntsville, Walker Co.	u/k	N	2000's
Diagnostic Unit	Huntsville, Walker Co.	------	N	------
John Sealy Hosp.	Galveston, Galveston Co.	WYC 857	--	------
Ferguson Unit	Midway, Madison Co.	KFH 296	N	1700's
Eastham Unit	Weldon, Houston Co.	KFH 308	N	1600's
Ellis Unit	nr Huntsville, Walker Co	KFH 306	N	1800's
Coffield Unit	Tennessee Colony, Anderson Co.	KFH 287	N	3000's
BETO Unit I	Tennessee Colony, Anderson Co.	WQI 478	N	3200's
Pack Unit	nr Navasota, Grimes Co.	u/k	N	3500's
* Mountain View Unit	Gatesville, Coryell Co.	?KYO 793	N	3100's
* Gatesville Unit	Gatesville, Coryell Co.	KFH 292	N	3300's
Hilltop Unit	Gatesville, Coryell Co.	u/k	N	3600's
Central Unit	Sugarland, Ft. Bend Co.	KFH 247	S	2500's
Jester Units I & II	Richmond, Ft. Bend Co.	KFH 294	S	2400's
Darrington Unit	Sandy Point, Brazoria Co.	KFH 293	S	2600's
Ramsey Units I & II	Bonney, Brazoria Co.	KFH 298	S	2700's
Retrieve Unit	Angleton, Brazoria Co.	KFH 295	S	2800's
Clemens Unit	Brazoria, Brazoria Co.	KFH 297	S	2900's

(*= Women's unit)

Units under construction:

Ramsey III
Central II
BETO II
Pack

Administration Division:
Location: Headquartered at Walls Unit, Huntsville, Walker Co.
Radio Series: 1100's
Some important unit numbers:
1101 = TDC Director; 1102 = Asst. TDC Director; 1104 = TDC Aircraft
(note: In Huntsville area, ch. 5 is also used to activate administrative unit's pagers.)

Agricultural Division
Location: Headquartered in Central Unit, Sugarland, Ft. Bend Co.
Radio Series: 1200's (most all based at Central Unit.)

Construction Division
Location: Main Office at Walls Unit
Radio Series: 1300's

Supply Division
Location: Northern Base at Wynn Unit, Huntsville (Radio # 1520)
Southern Base at Central Unit, Sugarland (Radio # 1522)
Radio Series: 1500's (these are tractor trailer rigs hauling between units.)

John Sealy Hospital
Location: Galveston, Galveston Co.
Radio Series: unknown. Has base to communicate with TDC ambulances.
(Note: John Sealy Hosp. supports TDC with medical care for inmates. Has a base station on TDC ch 1 rptr. and TDC ch. 5.)

Note:
1400's radio series = heard on ch 5--type or unit assignment unknown.
1900's radio series = on all chs.--transportation (buses & vans)- prisoner transfers between units.
Goree Unit is equipped with ch. 1 only.
Pack Unit has been heard active on ch. 5.

To wrap up and summarize radio action by county:

County:	TDC Ch.
Anderson Co.	Ch. 6, 5
Brazoria Co.	Ch. 8, 9, 5
Coryell Co.	Ch. 6, 5
Ft. Bend Co.	Ch. 7, 5
Galveston Co.	Ch. 1, 5
Grimes Co.	Ch. 5 (at present only)
Houston Co.	Ch. 2, 5
Madison Co.	Ch. 2, 5
Walker Co.	Ch. 1, 2, 5

Note: In all areas with TDC facilities, TDC ch. 11 and the Texas Inter-city channels are also likely to be active.

Very, very nice report, fellows. Let's continue to hear more from you both. Again, many thanks for your efforts.

We have one more Texas report before we move along to the other state's material. This report comes from Brent Alexander of Lufkin, TX reporting on the Angelina County Radio Systems. Thanks Brent for the report and let's see more of your letters in my mail box.

From Brent, TX-64:

ANGELINA COUNTY RADIO SYSTEMS

LAW ENFORCEMENT CH's

Ch. 1 154.890 R (155.565 in) KUZ 778/WRG 41--Angelina Co. SO dispatch
Ch. 2 154.710 R (155.535 in) KUZ 780--Lufkin PD dispatch
Ch. 3 & Ch. 4 -- Inter-city frequencies
(Note: The SO dispatches Huntington PD & Zavalla PD on SO ch. Also SO & PD mobiles are equipped with each other's dispatch frequencies.)

Unit numbers:
501 = Sheriff; 502 = Chief Deputy
503--506 = Patrol Deputies (day shift)
507--511 = Patrol Deputies (night shift)
514, 518 = Patrol Deputies (day)
590 = Huntington PD Chief
590A, B, C = Huntington PD units

Lufkin PD units:
101 = Chief of Police
102 = Capt.
103 = Shift Supervisor
46, 240's, 250's = Patrol Cars
300's = Detectives
114, 118 = Motorcycles

591 = Zavalla City Marshall
540--544 = Constables (Pct. 1 thru 5, respectively)
(ed. note: No state units on the SO ch.?)

FIRE / EMS CH's

154.01 R (154.385 in) WSL 804-- Angelina Co. VFD's Assn.--dispatched by the Lufkin FD--dispatches all VFD's.
154.445 B/M WQT 987 -- Lufkin FD & County EMS dispatch
155.340 M ---- -- Ambulance to hospital net
F1 171.475 R -- Angelina National Forest (includes mobiles for park maint.
F2 170.575 R -- " " " (at Lake Sam Rayburn.)

Angelina Co. Vol. Fire Dept. Unit Numbers:

700--702 = Fuller Springs VFD
710 = Rivercrest VFD (pumper)
720 = Hudson VFD Chief
721--723 = Hudson VFD units
730, 731 = Central VFD
741--743 = Huntington VFD
750 = Zavalla VFD (pumper)
760 = Moffett VFD (pumper)

Lufkin Fire Dept. Unit Numbers:

Station 1: 123, 124 = Pumper
125 = Ladder
1 = Ambulance
30 = Rescue Truck
20 = Chief ; 19 = Asst. Chief
21 = Fire Marshall

Station 2: 223, 224 = Pumper
224 = Pumper/reserve
2 = Ambulance

Station 3: 323 = Pumper
324 = Pumper/reserve
3 = Ambulance

Station 4: 423 = Pumper
4 = Ambulance
plus new un-numbered ladder

Station 5: 523 = Pumper
524 = Pumper/reserve

LOCAL GOVT CH's

158.775 B/M KLX 879-- Lufkin Street Dept.

As is always the danger of happening, excellent detailed information and frequency lists can be out-dated at the drop of a switch. Such was the case with the "Monitoring Arkansas" article series by Russell, AR-3, as evidenced by the following two reports.

From David, AR-15: David reports that the city of Little Rock, AR PD will be converting to the UHF band. Frequencies that are presently active, listed in order of most to least active:

Little Rock PD	453.150	KNBP 362	Area or useage uncertain
	453.200	KNBP 361	" " " "
	453.400	KNBP 361	" " " "
Little Rock FD	453.900	KNBJ 910	" " " "
	453.700	KNBJ 910	" " " "
Little Rock City govt			
	453.975	WZN 284	City govt operations
	453.250	KNBN 584	Central Ark. Transit--city/county bus

In addition David adds that the Little Rock PD has changed the unit number system from a three digit number series to an alph-numeric type; for example, 1 Nora 42 or 2 X-ray 40. He believes the first number indicates the shift. He asks if anyone has any further information, corrections or additions on either the frequencies or the unit number assignment to contact him. Address is: David Montgomery, AR-15, 7516 Ember Lane, Little Rock, AR 72209. And don't forget to also report in to your editor (me).

From MIKE, AR-13: Mike also reports in with a correction to the "Monitoring Arkansas (Part One)" article with regard to the Arkansas State Police Troop L frequency. Mike says Troop L (Springdale) uses 44.62 as their main channel, not 44.66. So make your corrections in your newsletter copy.

Mike also sends a list of confirmed frequencies in the N.W. Arkansas area.

NORTHWEST ARKANSAS AREA FREQUENCIES

Arkansas State Agencies

44.62-- Arkansas State Police Troop L (Springdale)
158.745- Arkansas State Civil Defense (Springdale)--repeater
151.100- Arkansas Highway Maintenance (Springdale)--repeater
151.175- Arkansas State Game & Fish Dept.--repeater

Frequencies common to all agencies---

37.20 ---Inter-departmental and duplex with A.S.P. on 44.62
37.24 ---Inter-departmental and duplex with A.S.P.mobiles only on 44.62
37.10 ---Inter-departmental--Sheriff's secondary ch.
155.340 ---all area hospitals and ambulances

Benton County, AR

Countywide

37.06 --Benton Co. Sheriff Dept.
37.02 --Benton Co. Sheriff Dept., car-to-car (code B)
46.10 --Benton Co. Fire Network (rural fires)
46.16 --Benton Co. Fire Network (truck-to-truck)
154.980 --Benton Co.--county govt. operations
45.52 --Benton Co. Health Dept.

Benton Co. Municipalities

37.26 --Bentonville PD
46.06 --Bentonville FD & Rogers FD
155.940 --Bentonville FD & City Govt.
155.520 --Rogers PD -- F1-main dispatch
155.490 --Rogers PD -- F2-secondary--special messages
155.205 --Rogers Ambulance
155.865 --Rogers City Govt.
37.18 --Bella Vista Sheriff's Patrol--main dispatch
37.34 --Bella Vista Sheriff's Patrol (car-to-car)
37.22 --Siloam Springs PD
37.38 --Lowell PD
46.12 --Lowell FD
37.10 --Pea Ridge PD, Decatur PD & Gentry PD

Carroll County, AR

37.30 -- Carroll Co. Sheriff Dept.
37.14 -- Eureka Springs PD
37.10 -- Eureka Springs FD

Madison Co., AR

37.12 -- Madison Co. Sheriff Dept.

Washington Co., AR

County-wide

37.08 --Washington Co. Sheriff Dept.
154.355 --Washington Co. Fire Network (rural fires)
154.430 --Washington Co. Fire Network (truck-to-truck)

Washington Co. Muncipalities

155.550 -- Fayetteville PD
154.430 -- Fayetteville FD (& Prairie Grove FD)
155.235 -- Fayetteville EMS
155.625 -- University of Arkansas/Fayetteville--security on campus
163.000 -- Fayetteville V.A. Hospital
45.40 -- Springdale PD-- F1-main dispatch
45.36 -- Springdale PD-- F2-secondary ch.
46.20 -- Springdale FD
45.64 -- Springdale City Govt.
37.16 -- Prairie Grove PD
154.430 -- Prairie Grove FD (& Fayetteville FD)

Finally, Mike advises the following agencies use voice scrambling:
Springdale PD--45.400
Fayetteville PD--155.550
University of Arkansas/Fayetteville Security--155.625
(Ed. note: I wonder if it's digital or "plain" inversion scrambling?)

Thanks, Mike, for that very fine list. It's always good to hear from you. Let's continue to hear from you from time to time.

And with that it's time to close down until next month. It looks like there will be some more good information for you in next month's column. And provided ye editor has some spare time, there may even be some Central Texas Counties Radio System reports. But don't hold me to it if I don't make it. Until then, may those lights keep dancing for you.

PUBLIC SAFETY - NORTHEAST:

Send Public Safety and Special Emergency frequencies, radio system details, and questions as follows -- New England states, New York, Pennsylvania, New Jersey, Maryland, Delaware and District of Columbia:

Richard Barnett, P.O. Box 428, Newton Highlands, MA 02161.

Hello again from the Northeast. This month I'm glad to announce that at the time of this writing a southern New England scanner club is about to be formed. This club will most likely be a -at the approval of the executive officers- chapter of the RMCA. The first meeting is scheduled for August 26th at the Hope Jackson (Scituate) Rhode Island fire department hall. Obviously you are all now reading this over a month after this August meeting, however we hope that many meetings will be taking place following the August get-together and if you would like more information on the southern New England scanner club, you can write Denis Dandeneau at Post Office Box 7052, Warwick, R.I. 02887. You can also call Denis at (401)828-1641. At this time I do know that members from Rhode Island, Massachusetts, Connecticut and New Hampshire will be at the Scituate, R.I. meeting and that car pools are being formed to make the trip easier for everyone. I'll have more information in the next issue.

When I heard that the Public Safety areas had been re-districted I was, as I mentioned in a previous article, rather pleased about the idea. I was a little disturbed, however, to hear that while I still had Maryland, I did lose Washington, D.C. I called John Arendt about this and he agreed that I should keep D.C. I want to thank John very much for his just consideration. The Midwest is really lucky to have him.

New England

New Hampshire From Denis (RI-017): -I have to get southern New England people to help out with northern New Engalnd! Come on you members from the north!

South West New Hampshire Medical Codes KCF415 (154.430)

1	Breathing difficulty	20	Shock
2	Possible heart attack	21	Stab wounds
3	Lacerations	22	Stroke
4	Fractures	23	Reaction to surgery
5	Gunshot wounds	24	Eye injury
6	Reaction to drugs	25	Multiple injuries
7	Alcohol problem	26	Dislocations - sprains
8	Maternity	27	Diabetic coma
9	Cardiac arrest	28	Old age
10		29	Unknown problem
11	Abdominal pains	30	
12	Head injury	31	Accident
13	Fainting - Dizziness	32	Medical reference requested
14	Neck - back injury	33	Drowning
15	Epilepsy - convulsions	34	Not suitable for broadcast
16	Hemorrahaging	35	Separations
17	Miscarriage	51	RAPE
18	Burns	54	Untimely death
19	Punctures		

Massachusetts

West Springfield Police

1	District 1	9	Merrick (South of underpasses)
2	District 2	10	Merrick (North of underpasses)
3	District 3	11	Memorial Avenue (West of Union)
4	District 4	12	Mittineague
5	District 5	13	Motorcycle
6	Desk	20	Patrol Supervisor
7	Ambulance	21	D.B.(Sgt.)
8	Center	22	D.B.

23	Y.A.B.	8	Crime in progress - name it
24	Burglary squad	8B	Crime in progress - burglary
25	Narcotic squad	8H	Crime in progress - holdup
1	Accident	9	Odometer
2	Alarm	10	Out of service - reason
3	Ambulance	10E	Out of service - eat - call
4	Assist officer	11	Park and walk
4E	Assist officer - emergency	12	Return to station
5	Bomb threat	13	Take a report or preliminary
6	Break up gang	14	Transport
7	Call the station	15	Vandalism
7H	Call home	16	WMLAC - Channel #6

Fall River Police

1	Transportation	12	Notification
2	Report	13	Traffic
3	Coffee Break	14	Disabled
4	Garage	15	Confidential investigation
5	Lunc (5H) at home	16	Service call
6	Continued Investigation	17	Call into station
7	Vacnat House Check	18	Car wash
8	Assisting an officer	22	Back to post
9	Serving process	36	Extra job
10	Booking Room	40	Bank check
11	Tagging	41	Drug store check

3-1	Assisting an officer
3-2	Auto accident
3-3	Auto abandoned
3-4	Auto investigation
3-5	Auto illegally parked
3-6	Auto recovery
3-7	Stolen auto
3-8	Assault & battery
3-9	Break
3-10	Armed robbery
5-1	Malicious mischief
5-2	Missing person
5-3	Sudden illness
5-4	Suspicious person
5-5	
5-6	Transportation
5-7	Lunch
6-2	Trespassing
6-3	Vacant house check

4-1	Booking room
4-2	Continued investigation
4-3	Gang
4-4	Disturbance
4-5	Dog complaint
4-6	Domestic
4-7	Drunk
4-8	Fire alarm
4-9	Larceny
4-10	Meet complainant
7-1	Call station
7-2	Call dispatcher
7-3	Call home
7-4	Standby
8-1	Out of service
9-1	Back in service

50 Blue	Oxygen
50 Red	Injury/Bleeding
50 Green	Break in Progress
50 White	Bank -Burglar alarm
50 Orange	Riot -Major disturbance
50 Yellow	Bomb scare
50 Purple	Mentally disturbed person
50 Black	Armed robbery
50 Grey	Weapons
50 Pink	Gay person

Springfield Police

1	Man down
2	Dog complaint
3	Traffic violation
4	Auto accident
5	Domestic disturbance
6	Gang disturbance
7	Ambulance call
8	Call police station
9	Drunk disturbance
10	Assist police officer
11	Prowler
12	Transport
12E	Emergency transport
14	Take a report
21	Assault
22	Return to station
24	Out to lunch
29	Suspicious person
49	Burglary
64	Location and mileage check
69	Armed robbery
901	Go to channel 1-460.10 MHz
902	Go to channel 2-460.45 MHz
903	Go to channel 3-460.50 MHz
904	Go to channel 4-460.30 MHz
130	Go to station (130 Pearl St.)

Springfield Fire

1	Will wind alarm box
2	Send rest of assigned units
3	Respond fire chief
4	Company in service
5	Emergency
6	Bomb threat
7	Call police
8	Company out of service
9	Call fire marshall
10	Send ambulance
11	Fatality
12	Call medical examiner
13	Apparatus in accident
14	Send comfort wagon
15	Unit encountering harassment
16	Call fire headquarters

Springfield Ambulance

20	Heart patient
21	Breathing difficulty
22	Broken bone
23	Severe bleeding
28	Shock
29	Back and neck injuries
30	Diabetic

24	Victim unconscious
25	Maternity
26	Condition unknown
27	Gun shot would
32	Burns
33	Violent victim
34	Head injury
50	Performing CPR

CODE BLUE-	FALSE ALARM
CODE YELLOW	ONE CO. CAN HANDLE
CODE ORANGE	UNDETERMINED
CODE RED	MAJOR FIRE

Connecticut

Bridgeport

6A	Call headquarters
6AH	Call your home
20	Auto accident
21	Ambulance
22	Assault with a weapon
23	A.D.T. drop
24	Bank detail
25	Burglars at work
26	Breach of peace
27	Drunk
28	Drunken driver
29	Fire alarm 1st
30	Fire alarm 2nd
31	Fire alarm-general
32	Halp wanted by policeman
33	House entered
34	Hit and run
35	Hold-up store or person
36	House fight
37	Report to precinct
38	Report to hdqts.
39	Suspicious person
40	Suspicious auto
41	Store entered
42	Suicide
43	Street fight
44	Stolen auto
45	Money transfer
46	Report to maintenance
47	Report to garage
48	Murder
49	Drowning
50	Wanted for felony
51	Pick-up and hold
52	Call traffic
53	Boys playing in street
54	Crap game in progress
55	Car blocking driveway
56	Smoke nuisance
57	Gang causing disturbance
58	Noise complaint
59	Tampering with meters
60	Dangerous road conditions
61	Call prosecutor
62	Call the det. bureau
63	Glue sniffing
64	Check traffic light
65	Investigate signs
66	Theft and robbery
67	Airplane crash
68	All narcotic violations
69	Escape from hdqts.
70	Escape from county jail
71	Meet the complaintant
72	Locations please
73	Roll call
74	Missing person
75	Indecent exposure
76	
77	Cars meet
78	
79	
80	
81	

DW	Dog warden
CB	Complaint bureau
LS	Leaving the scene
GOA	Gone on arrival
31-32	(Special units)
33-34	(Unmarked cars)
1-2	(Service)
3-4	(Trucks)

C1	Message received
C3	Request for motor vehicle check
C6	Out of service
C7	On patrol-back in service
C8	On the scene
CODE E	Red light and siren

North End Cars

Amber 23	Green 34
Amber 24	Green 35
Amber 25	Green 36

South End Cars

Amber 21	K-9 2
Amber 22	Blue 14

East Side Cars

Red 41	Green 32
Red 42	Green 38
Green 31	K-9 3 & 4

West End Cars

Blue 11	K-9 1
Blue 13	

Fairfield

1	Phone headquarters
2	Phone home
3	Unwanted guest or patron
4	Door unlocked
5	Open sally door
6	Close sally door
7	Harassing phone call
8	Meeting
9	MV & license request
10	Suspicious person
11	Suspicious vehicle
12	Suicide
13	Murder
14	Drowning
15	D.O.A.
16	Send medical examiner
17	Vandalism
18	
19	Escort
20	Give assistance
21	Dangerous road condition
22	Theft
23	Escape from hdqtrs.
24	Report to police garage
25	Report to headquarters
26	
27	Traffic sign damaged/missing
28	Traffic light malfunction
29	Juvenile complaint
30	Children playing in street
31	Group causing disturbance
32	Narcotics violation
33	Accident
34	Accident - Reported injuries
34(A)	Airplane crash
34(B)	Boat accident
35	Ambulance
36	Out ot service
37	In service
38	Traffic detail
39	Tax violation
40	Assault
41	Breach of peace
42	Drunk
43	Bomb threat
44	Fire
45	Shoplifter
46	Purse snatch
47	Robbery
48	Holdup
49	Radio check
50	Bank detail
51	Unknow trouble
52	Noise complaint
53	Prowler
54	Peeping Tom
55	Investigation
56	Parked at call box
57	Shooters in area
58	Fireworks complaint
59	Item to be picked up
60	Pick up and hold
61	Recovered property
62	
63	
64	Mental patient
65	Missing person
66	Hot Line message
67	House entered
68	
69	Alarm ringing
70	Alarm check via phone - OK
71	Business entered
72	Burglar at work
73	
74	Tampering with MV
75	Send next listed wrecker
76	Police vehicle inoperable
77	Abandoned MV
78	Tow zone violation
79	Stolen MV
80	Parking violation
81	Drunk driver
82	Reckless operation of MV
83	Hit & run
84	Assist motorist
85	Subject slumped over in MV
86	Location
87	Stand by (Radio on location)
88	Unnecessary use of radio
89	Disposition
90	Neighbors complaint
91	Roaming dog
92	Barking dog
93	Injured dog
94	Dead animal on highway
95	Car wash
96	
97	
98	Hdqtrs. on auxiliary power
99	OFFICER IN TROUBLE
100	(Yellow) Assemble for Riot inspection
100	(Red) Riot in progress
200	Board of education
201	Grand Union-Post Rd.
202	McDonalds
203	A&P-Post Rd.
204	Post Office-Post Rd.
205	Circle Lanes
206	Fairfield Store
207	Tax Office
250	A&P-Tunxis Hill
251	County Cinema
252	Jimmies
253	Shoetown
254	Caldors
255	Angus Restaurant
256	Pantry Pride-Villa Ave.
257	Bradlees

208	City National: Bank-Post Rd.	258	Earport
209	Community Theater	259	Gulf Station-Kings Hwy.
210	Pantry Pride-Kings Hwy.	260	
300	At home	319	Fortunos
301	Driftwood	320	Golds Deli
302	McDonalds	321	Center Rest.
303	Dugout	322	Mikes Apiza
304	Arthur Treachers	323	Alfredos
305	Rawleys	324	Seven Eleven
306	Larry's Diner	325	Athena Diner
307	Fairfield Diner	326	Dapontes Rest.
308	Post Rd. Rest.	327	Greenfield Pharm.
309	Town Squire	328	Greenfield F.S.
310	Duchess	350	Green Coast
311	Dunkin Donuts	351	Ruhns
312	Farm Shop	352	Jimmies
313	Cindys	353	Pke Diner
314	Howard Johnsons	354	Cup and Saucer
315	Apizza Center	355	Andros Diner
316	Luigis	356	Bonanza
317	Spt. Diner	357	Jo-Es
318	Steve Deli	358	Lous Pizza Pan
359	Moishes Deli	363	Pizza Palace
360	Lenns Apizza	364	
361	Kentucky Fried Chicken	365	
362	Carras Apizza	366	

New York

10-1	Call your quarters	10-34	Sprinkler malfunction
10-2	Return to you quarters	10-35	Defective alarm system
10-3	Call the dispatcher by telephone	10-36	Auto emergency
10-4	Acknowledgement	Code 1	Accident and/or washdown-gasoline spillage
10-5	Repeat message	Code 2	Accident-no gasoline spillage
10-6	Stand by	10-37	Assist civilian (applies whether or not FD related)
10-7	Verify address	10-38	Steam leak
10-8	In service, by radio	10-39	Water condition
Code 1		Code 1	Water leak in structure
Code 2		Code 2	Broken main in street
10-9	Return all units except company required at the scene	10-40	
10-10	What is your location?	10-41	Incendiary or suspicious fire
10-11	Request for radio test count	Code 1	Occupied structure
10-12	First arriving unit, give preliminary	Code 2	Occupied structure
10-14	Breakdown of apparatus	Code 3	Vacant building
10-18	Return all units except engine and ladder company required	Code 4	Vacant building
10-19	Return all units except company required at the scene	10-44	Request for public ambualnce
10-20	Proceed to box location	10-45	DOA or possible DOA
10-21	Brush fire	Code 1	Victim deceased
10-22	Outside rubbish fire	Code 2	Victim possibly deceased
10-23	Abandoned/derelict vehicle fire	Code 3	Victim suffering serious injuries which may lead to death of the person
10-24	Auto fire	10-47	Request for police assistance (specify)
10-25	Manhole or transformer vault fire	10-48	Request for police assistance (harassment)
Code 1	a. Manhole fire extended to bldg.	10-49	
	b. Gas main leak	10-50	
	c. Uncontrollable gas leak in structure	10-51	Cance-lation of all outside activities
Code 2	Blown manhole cover or smoke issuing under pressure	10-59	Water pressure alert-Phase 1
		10-60	Water pressure emergency-Phase 2

Code 3	Smoke seeping from manhole-less severe than Code 1 or Code 3	10-68	Restrict use of telephone, voice alarm and radio to absolute minimum
Code 4	Building fire extends to main fuse box	10-70	In line pumping
10-31	Clogged incinerator	10-75	Request 3 engines, 2 ladders and a battalion chief response
10-32	Defective oil burner	10-92	Malicious false alarm
10-33	Odor of smoke	10-99	Units will be operating for 30 minutes

NY State Frequency Info

Columbia County Sheriff:	39.18
Dutchess County Sheriff:	F-1 39.04 F-2 39.14 F-3 39.30 39.38
Orange County Sheriff:	F-1 39.20 F-2 car-to-car 39.26
Putman County Sheriff:	F-1 39.12 F-2 39.18 F-3 39.36
Rockland County Sheriff:	37.18
Ulster County Sheriff:	F-1 39.16 F-2 39.18
Central Hudson Power:	Dutchess County 48.24 Orange County 48.06 Ulster County 48.12 Pagers 153.515
Dutchess County Fire:	F-1 46.36 F-2 46.28 F-3 46.30 F-4 46.16, 45.88, 155.745
Orange County Fire:	154.205, 46.22, 46.16
Putnam County Fire:	F-1 46.38 F-2 46.04
Ulster County Fire:	F-1 46.34 F-2 46.46 F-3 46.30 F-4 46.48, 33.48
Arlington Fire:	F-1 46.36 F-2 46.22
Statewide EMS:	F-1 155.34 F-2 155.400 F-3 155.175 F-4 155.280
Poughkeepsie Town PD:	F-1 45.54 F-2 45.66
NY State Conservation:	F-1 151.22 F-2 155.28
Dutchess County Highways:	Repeater Out 156.135 Repeater In 159.045
Putnam County Highways:	Repeater Out 156.240 Repeater In
Taconic State Parkway:	Repeater Out 158.775 Repeater In 153.785
Dutchess County Health:	Repeater Out 154.115 Repeater In 158.880
Ithica College PD:	155.715
Cornell University PD:	156.210
Galleria Mall, White Pl:	464.875 (Security)
Utica City PD:	F-1 155.31 F-2 155.43 F-3 155.85 F-4 155.97
Upstate NY Reservoir Sec:	37.500
South Hill Mall:	464.565
Marlboro Town PD:	158.760
Poughkeepsie City PD:	F-1 155.13 F-2 155.415
Columbia County Sheriff:	155.91
Clinton County Sheriff:	156.21
Elmira County Sheriff:	154.875
Shemon County Sheriff:	154.875
Thompkins County Sheriff:	155.190
Shyler County Sheriff:	158.790
Stuben County Sheriff:	39.140
Seneca County Sheriff:	155.550
Elmira PD:	155.250
Kent Town PD:	39.280
Plattsburgh PD:	155.790
Watkins Glen PD:	39.180

NY State Police Frequency Assignments

Troop	Base-to-Car	Car-to-Base	Area	Troop	Base-to-Car	Car-to-Base	Area
A	155.505	155.535	Batavia/ Buffalo	F	155.535	154.935	Newburgh/ Middletown
B	154.905	155.595	Plattsburgh	G	155.445	154.680	Albany
C	155.655	154.950	Binghamton/ Oneonta	NYC	154.935	155.475	NYC
D	155.505	154.920	New Hartford/ Utica	K	155.505	155.520	Poughkeepsie/ Westchester
E	154.905	155.740	Elmira	L	155.505	155.520	Long Island
				L	155.460	155.460	Primary

F-1	Frequency Pair form above table	
F-2	154.695	Statewide car-to-car frequency
F-3	154.695	"State Frequency" Troop alerts, etc.
F-4	155.565	Criminal Investigation, secondary car-to-car, radar squads
F-5	155.370	Statewide Inter-agency frequency "MRD"
F-6	155.070	New York State Dep't of Justice/ Mental Hospital
F-7	155.475	Emergency/Alerts

State Capitol NYSP F-1 155.460 Simplex F-2 155.550 Simplex

Yonkers Fire

10-1		10-7	Verify address
10-2	Return to quarters	10-8	In service, returning to quarters
10-3	Call dispatcher by phone	10-9	Off the air
10-4	Acknowledgement	10-10	
10-5	Repeat message	10-11	Request radio test
10-6	Stand by	10-12	First arriving unit give prelim.

10-13	Breakdown apparatus	10-27	Manhole fire
10-14	What is your location?	10-28	Inside rubbish fire
10-15	Send police to location	10-29	Structure fire
10-16	Send ambulance to location	10-30	Request full first alarm assignment
10-17	Send Con Ed to location		
10-18	Return all companies except first engine and truck	10-31	Bomb scare
		10-32	False or accidental alarm
10-19	Return all units except unit required at scene	10-33	Malfunction of sprinkler system
		10-34	Auto accident
10-20	Proceed to location at reduced speed	10-35	Defective alarm system
		10-66	Riot
10-21	Brush Fire	10-71	Injury
10-22	Outside rubbish fire	10-72	Death
10-23	Clogged incinerator	10-73	Arson investigator requested
10-24	Automobile fire	10-74	
10-25	Defective oil burner	10-84	Chief Officers at scene
10-26	Kitchen or oven fire	10-92	False Alarm

New Jersey

Morris County APCO 10-Code Signals

10-1	Emergency, Clear the air	10-20	What is your location?
10-2	Receiving well	10-21	Call by phone
10-4	O.K.	10-22	Take no further action
10-5	Relay	10-23	Stand by
10-6	Property check	10-24	Trouble at station
10-7	Out os service	10-25	Drunk driving
10-8	In service	10-26	Is you drunkometer available
10-9	Personal or confidential	10-27	Police needed at ...
10-10	Officer needs help	10-30	Question does no conform to regulations
10-11	Prisoner in custody	10-36	Correct time
10-12	Officials present	10-44	Possible homicide, suicide
10-13	Armed robbery in progress	10-45	Fire
10-14	Escort	10-46	Accident
10-15	Money guard	10-47	Domestic
10-16	Stand by (busy)	10-48	M.V. check
10-17	Wrecker	10-68	Repeat message
10-18	Return to ...	10-97	Arrived at scene
		10-98	Assignment completed

Morris County Police KEC-223

Bedminster	KJP467	(O)	Hopatcong	KJP472	(C)
Bernardsville	KJP474	(O)	Jefferson Twp	KEI426	(D)
Bernards	KJP471	(O)	Kinnelon	KGT544	(O)
Boonton	KEB239	(L)	Lincoln Park	KEG882	(L)
Boonton Twp	KJG932	(L)	Madison	KEB382	(O)
Butler	KEH651	(O)	Mendham	KJP468	(C)
Chatham	KEA518	(O)	Mendham Twp	KJP465	(C)
Chatham Twp	KBC822	(O)	Minehall	KEJ368	(D)
Chester	KUY359	(D)	Montville Twp	KCY596	(L)
Chester Twp	KJP473	(C)	Morris Twp	KJR323	(O)
Denville Twp	KEG200	(*)	Morris Plains	KEC223	(C)
Dover	KEB291	(D)	Morristown	KED262	(O)
East Hanover Twp	KEG887	(O)	Mountain Lakes	KRZ926	(L)
Far Hills	KRG847	(C)	Mt. Freedom	KEG282	(O)
Florham Park	KEF290	(O)	Mt. Olive Twp	KJP470	(C)
Franklin Twp	KEE275	(O)	Parsippany Troy-Hills	KEB990	(O)
Hanover Twp	KEG446	(O)	Passaic Twp	KJH299	(O)
Harding Twp	KJP466	(C)	Peaquanck	KEE366	(O)
Randolph Twp	KEG282	(D)	Succasanna	KED462	(D)
Rockaway	KFF345	(D)	Washington Twp	KJH250	(D)
Rockaway Twp	KEI621	(D)	Wharton	KEG739	(D)
Roxbury Twp	KSU435	(O)	Whippany	KEG446	(O)

C/county
D/dover
O/other
*/other; local

Morris Fire

Bedminster	KCJ852	(C)	Madison	KEC840	(C)
Bernards	KJN750	(O)	Mendham	KLL652	(C)
Bernardsville	KEA847	(C)	Mendham Twp	KLL652	(C)
Boonton	KEG388	(C)	Mine Hill	Mobile	(C)
Boonton Twp	KJF898	(C)	Montville Twp	KEP634	(C)
Butler	KBE465	(C)	Morris Twp	KRO486	(C)
Chatham	KGW784	(O)	Morris Plains	KTS529	(C)
Chatham Twp	KEH308	(O)	Morristown	KCE738	(C)
Chester	KEE929	(C)	Mountain Lakes	KEH547	(C)
Chester Twp	KJW777	(C)	Mt. Freedom	KJB851	(C)
Denville Twp	KCS485	(C)	Mt. Olive Twp	None	
Dover	KCQ272	(C)	Parsippany Troy-Hills	KJF898	(C)
East Hanover Twp	KCU822	(O)	Passaic Twp	KJF884	(C)
Far Hills	KJJ464	(O)	Randolph Twp	KJB851	(C)
Florham Park	KDQ304	(C)	Rockaway	KEJ452	(C)
Franklin Twp	None		Rockaway Twp	KEJ452	(C)
Hanover Twp	KDE641	(O)	Roxbury Twp	None	
Harding Twp	Mobile	(C)	Succasanna	KDL834	(C)
Hopatcong	KBH627	(C)	Washington Twp	KJS690	(C)
Jefferson Twp	KEI340	(C)	Wharton	KLD668	(C)
Kinnelon	KED268	(C)	Whippany	KDE641	(O)
Lincoln Park	KBC889	(C)			

C/county
O/other

Pennsylvania

From Chris (PA-031):

44.64 PA Game Commission Base & Mobile Ch-1
44.84 PA Game Commission Base & mobile Ch-2
171.425 PA Game Commission Common repeater for ch-1 & 2
151.370 PA Game Commission Repeats local mobiles & non-local bases
171.575 PA Game Commission Dallas Base WBD75(local)

159.390 PA Game Commission Point-to-point repeater for Dallas base
172.275 PA Gave Commission Point-to-point repeater for mobiles
172.975 PA Game Commission Use uncertain

Note: this is a complicated system...can anyone else provide more details?

PA Dept. of Forestry
151.175 Dist 11, N. Luzerne, Wyoming, Lackawanna Susq. & Wayne
151.295 Dist 20, S. Luzerne, Sullivan, Columbia, Montour & Northumberland Counties
151.385 Dist 19 Pike, Monroe, & Northampton
151.295 Dist 13 Elk and Cameron
151.175 Dist 12 Lycoming
151.175 Dist 7 Union, Snyder, Centre
155.455 PA Drug Control repeater, DGW465 in Kingston, KGX615
in State College, KZJ981, Clarks Summit
154.950 PA Drug Control Mobiles

Highway Depts.

47.30	Penn. Dot Base	47.38	Penn. DOT Mobiles
47.28	Penn. DOT Mobile-Mobile East	155.115	Kingston Township
156.240	Luzerne County	155.130	Wilkes-Barre City
151.115	Hazleton City	156.105	Wilkes-Barre Township

From Tom (PA-003):

Millcreek Police

10-1	Acknowledgement	10-15	Official visitor present
10-2	Ambulance wanted at ...	10-16	Out of service
10-3	Busy (stand by)	10-17	Out of service, subject to call at...
10-4	Phone chief's office	10-18	Police officer needs help, go to ...
10-5	Phone this station	10-19	Proceed with caution
10-6	Check full reg. info	10-20	Receiving poorly (cannot understand)
10-7	Contact chief at home	10-21	Repeat dispatch
10-8	Correct time	10-22	Report to HQ in person
10-9	In service	10-23	We have person in custody
10-10	Investigate	10-24	What is your location
10-11	Investigate drunk driver	10-25	Emergency--all cars respond
10-12	Investigate car occupants	10-26	
10-13	Jail break or escape	10-27	
10-14	Meet complainant and get report	10-28	

1	Accident	37	Holdup in progress
2	ADT alarm	38	Fire
3	Ambulance needed	39	Flat tire
4	Armed with gun	40	Hearing
5	Armed with knife	41	Hit & run
6	Assault	42	Lunch
7	Bank alarm	43	Justice of the peace
8	Blocked driveway	44	Injuries
9	Bomb reported in	45	Intrusion alarm
10	Burglary	46	Larceny
11	Barking dog	47	Indecent exposure
12	Courthouse	48	Man
13	County prison	49	Man in building
14	Complaint of boys	50	Missing person
15	Coroner needed	51	Malicious mischief
16	Chief's orders	52	Molesting
17	Call your home	53	Murder
18	Caution	54	Obtain full data
19	Correction	55	Open door
20	Cutting affray	56	Open windows
21	Disturbance	57	Proceed to hospital
22	D.O.A.	58	Parked car
23	Dangerous	59	Police photographer needed

24	Demented person
25	Disregard
26	Direct traffic
27	Doctor
28	Domestic trouble
29	Drunk
30	Dumping
31	Erie Police
32	Explosion
33	Electrical wire down
34	Fire alarm
35	Fight
36	Hunter
60	Pick up prisoner; escort
61	Pick up money
62	Prowler
63	Pedestrian struck at ...
64	Radio silence until...
65	Riot
66	Recovered
67	Shoplifter
68	Return to...
69	Robbery
70	Security lights out
71	Send wrecker
72	Shooting
73	Special attention
74	Sick
75	Stolen car
76	Street blocked
77	Stand by
78	Traffic tie-up
79	Traffic light out
80	Traffic violation
81	Street caved in
82	Strike
83	Suicide
84	Trash fire
85	Trouble
86	Woman
87	Vicious dog
88	Window peeper

Erie, PA. Police

10-1	Acknowledgement
10-2	Ambulance wanted
10-3	Arrived at the scene
10-4	Begin tour of duty
10-5	Busy
10-6	Call chief's office
10-7	Call H.Q.
10-8	Call your office
10-9	Call your home
10-10	Chase in progress
10-11	Check registration
10-12	CLEAN (scope)
10-13	Dead on Arrival
10-14	End tour of duty
10-15	Emergency
10-16	In service
10-17	Lunch
10-18	Need assistance
10-19	Need gas-repairs
10-20	Notify coroner
10-21	Office assignment
10-22	Out of service
10-23	Prepare for message
10-24	Prisoner in custody
10-25	RELCO in use
10-26	Report to HQ
10-27	Silen Run
10-28	Urgent
10-29	Wrecker
10-30	Your location
1	Auto accident (minor)
1A	Auto accident (injury)
1B	Auto accident (hit & run)
2	Alarm
3	Bomb threat
4	Blocked drive
5	Burglary
5A	Burglary in progress
6	Civil disturbance
7	Complaint of juveniles
8	Convoy or escort
9	Cutting or stabbing
10	Demented person
11	Disturbance
12	Dog complaint
13	Domestic trouble
14	Drunk
14A	Drunk driver
15	
16	Self exposure
17	Fight
18	Fire
19	Hamat Medica Center (ER)
20	
24	Larceny
25	Malicious mischief
26	Man armed with gun
27	Meet complaintant
28	Missing person
28A	Missing person returned
29	
30	Molesting
31	Money escort
32	Narcotics
33	
34	Pedestrian hit by auto
35	Prowlers
36	Riot
37	Robbery
38	Sex crime
39	Shooting
40	Special attention
41	Stolen Auto
41A	Stolen Auto recovered
42	Suicide
43	Trouble
44	Wanted person
45	Work traffic

21	Homicide	
22	Investigate	Signal 1 - Officer in trouble
23	Investigate Vehicle	Signal 2 - Crime Alert

Montgomery County Police

13	Detective	25	L. Moreland
14	Coroner	26	Cheltenham
19	Sheriff	27	Bryn Athyn

28	Springfield	63	Franconia
29	Abington	64	Worcester
31	Rockledge	65	Souderton
32	Whitemarsh	66	L. Providence
33	Jenkintown	67	Telford
34	L. Merion	68	U. Providence
35	U. Moreland	69	Salford
36	Narberth	71	U. Salford
37	Hatboro	72	Collegeville
38	W. Conshohocken	73	L. Frederick
39	Horsham	74	Trappe
41	Upper Dublin	75	U. Frederick
42	Conshohocken	76	Perkiomen
43	Ambler	77	Green Lane
44	Plymouth	78	Skippack
45	L. Gwynedd	79	Marlborough
46	Whitpain	81	Red Hill
47	Montgomery	82	Schwenksville
48	E. Norriton	83	Pennsburg
49	North Wales	84	Limerick
51	U. Gwynedd	86	Royersford
52	Norristown	87	U. Hanover
53	Landsdale	88	L. Pottsgrove
54	Bridgeport	89	New Hanover
55	Hatfield Twp.	91	Douglass
56	U. Merion	92	U. Pottsgrove
57	Hatfield Boro	94	Pottstown
58	Valley Forge Pk.	96	W. Pottsgrove
59	Towamencin	99	Spring City
61	L. Salford	400	Code zero van
62	W. Norriton	401	Code zero command post

15 Radio repair

Maryland, D.C. and hopefully some Delaware next month.

PUBLIC SAFETY - SOUTHEAST:

Send Public Safety and Special Emergency frequencies, radio system details, and questions as follows — Florida, Georgia, N. Carolina, S. Carolina, W. Virginia, and Virginia:

Public Safety followers from the southeastern U.S.: Good news! We have an editor for this column. His name is William Mauldin; his address is 2268 NW 30th Rd., Boca Raton, Florida 33431. Bill's first column will appear next month, but in the mean time, if you have any material to send him, please do.

Synthesized Hand-Held Scanner!

Communications Electronics,™ the world's largest distributor of radio scanners, now has even *lower prices* on our radio scanners. Chances are the police, fire and weather emergencies you'll read about in tomorrow's paper are coming through on a scanner right now.

With your scanner, you can monitor the exciting two-way radio conversations of police and fire departments, intelligence agencies, mobile telephones, energy/oil exploration crews, and more. Some scanners can even monitor aircraft transmissions! You can actually hear the news *before* it's news. If you do not own a scanner for yourself, now's the time to buy your new scanner from **Communications Electronics**. Choose the scanner that's right for you, then call our *toll-free* number to place your order with your Visa or Master Card.

We give you excellent service because **CE** distributes more scanners worldwide than *anyone* else. Our warehouse facilities are equipped to process thousands of scanner orders every week. We also export scanners to over 300 countries and military installations. Almost all items are **in stock** for **quick shipment**, so if you're a person who prefers fact to fantasy and who needs to know what's *really* happening around you, order your scanner today from **CE**!

NEW! Bearcat®† 350

The Ultimate Synthesized Scanner!

List price $599.95/**CE price $384.00**

7-Band, 50 Channel • Alpha-Numeric • No-crystal scanner • AM Aircraft and Public Service bands. • Priority Channel • AC/DC

Bands 30-50, 118-136 AM, 144-174, 421-512 MHz.

The new *Bearcat* 350 introduces an incredible breakthrough in synthesized scanning: Alpha-Numeric Display. Push a button—and the Vacuum Fluorescent Display switches from "numeric" to word descriptions of what's being monitored. 50 channels in 5 banks. Plus, Auto & Manual Search, Search Direction, Limit & Count. Direct Channel Access. Selective Scan Delay. Dual Scan Speeds. Automatic Lockout. Automatic Squelch. Non-Volatile Memory. Order your *Bearcat* 350 today!

Bearcat® 300

List price $549.95/**CE price $336.00**

7-Band, 50 Channel • Service Search • No-crystal scanner • AM Aircraft and Public Service bands. • Priority Channel • AC/DC

Bands 32-50, 118-136 AM, 144-174, 421-512 MHz.

The *Bearcat* 300 is the most advanced automatic scanning radio that has ever been offered to the public. The *Bearcat* 300 uses a bright green fluorescent digital display, so it's ideal for mobile applications. The *Bearcat* 300 now has these added features: Service Search, Display Intensity Control, Hold Search and Resume Search keys, Separate Band keys to permit lock-in/lock-out of any band for more efficient service search.

NEW! Bearcat® 350

Bearcat® Rebate Offer

Get a coupon good for a $30.00 rebate when you purchase a *Bearcat* 100, $15.00 rebate on model 210XL; $10.00 rebate on model 200. Offer valid only on purchases made between September 1, 1982 and October 15, 1982. Limit of one rebate per household. Offer good only in the U.S.A. Void where taxed or prohibited by law. Resellers, companies, clubs and organizations-both profit and non-profit, are not eligible for rebates. Employees of Electra Company, their ad agencies, distributors and retailers of *Bearcat* Scanners are also not eligible for rebates.

Bearcat® 210XL

List price $349.95/**CE price $229.00**

6-Band, 18 Channel • Crystalless • AC/DC

Frequency range 32-50, 144-174, 421-512 MHz.

The *Bearcat* 210XL scanning radio is the second generation scanner that replaces the popular *Bearcat* 210 and 211. It has almost twice the scanning capacity of the *Bearcat* 210 with 18 channels plus dual scanning speeds and a bright green fluorescent display. Automatic search finds new frequencies. Features scan delay, single antenna, patented track tuning and more. When you purchase the *Bearcat* 210XL between September 1, and October 15, 1982, you'll also get a factory rebate coupon good for $15.00.

NEW! Bearcat® 20/20

List price $449.95/**CE price $276.00**

7-Band, 40 Channel • Crystalless • Searches AM Aircraft and Public Service bands • AC/DC Priority Channel • Direct Channel Access • Delay

Frequency range 32-50, 118-136 AM, 144-174, 420-512 MHz

The *Bearcat* 20/20 automatic scanning radio replaces the *Bearcat* 220 and monitors 40 frequencies from 7 bands, including aircraft. A two-position switch, located on the front panel, allows monitoring of 20 channels at a time.

NEW! Bearcat® 200

List price $269.95/**CE price $179.00**

8-Band, 16 Channel • AC only • Priority Dual Scan Speeds • Direct Channel Access

Frequency range: 32-50, 138-174, 406-512 MHz

The *Bearcat* 200 is a scanner with high performance. Sealed one-piece keyboard lets you program each channel for automatic scanning. There's automatic lockout to by-pass individual channels. Direct Channel Access to go instantly to any channel. Plus Automatic Squelch, Dual Scan Speed, Selective Scan Delay and Automatic Search to let you find hidden frequencies.

NEW! Bearcat® 100

The first no-crystal programmable handheld scanner.

List price $449.95/**CE price $284.00**

8-Band, 16 Channel • Liquid Crystal Display Search • Limit • Hold • Lockout • AC/DC

Frequency range: 30-50, 138-174, 406-512 MHz

The world's first no-crystal handheld scanner has compressed into a 3" x 7" x 1¼" case more scanning power than is found in many base or mobile scanners. The *Bearcat* 100 has a full 16 channels with frequency coverage that includes all public service bands (Low, High, UHF and "T" bands), the 2-Meter and 70 cm. Amateur bands, *plus* Military and Federal Government frequencies. It has chrome-plated keys for functions that are user controlled, such as lockout, manual and automatic scan. Even search is provided, both manual and automatic. Wow...what a scanner!

The *Bearcat* 100 produces audio power output of 300 milliwatts, is track-tuned and has selectivity of better than 50 dB down and sensitivity of 0.6 microvolts on VHF and 1.0 microvolts on UHF. Power consumption is kept extremely low by using a liquid crystal display and exclusive low power integrated circuits.

Included in our low **CE** price is a sturdy carrying case, earphone, battery charger/AC adapter, six AA ni-cad batteries and flexible antenna. The *Bearcat* 100 is in stock for quick shipment, so order your scanner today.

NEW! Fanon FCT-200 Cordless Telephone

CE price $149.00

Looking for an excellent cordless telephone? We recommend the Fanon model FCT-200. This cordless phone is designed and engineered to provide many years of reliable service and put an extra measure of convenience into your home or office. It features extended range, automatic secure protection, two-way intercom between the Fanon-phone handset and a conventional phone plugged into the base. Manual secure lock override. Two-way call alert. Last number memory redial. High-low volume control and low battery indicator light. Full duplex, simultaneous conversation capability. Operates with most touch tone or rotary dial systems. FM quality – quiet operation. Rechargeable Nickel-cadmium batteries included. Under ideal conditions, the range is 700 feet. Order today!

TEST ANY SCANNER

Test any scanner purchased from **Communications Electronics**™ for 31 days before you decide to keep it. If for any reason you are not completely satisfied, return it in original condition with all parts in 31 days, for a prompt refund (less shipping/handling charges and rebate credits).

Bearcat® Four-Six ThinScan™

List price $189.95/**CE price $118.00**

Frequency range: 33-47, 152-164, 450-508 MHz.

The incredible, *Bearcat* Four-Six Thin Scan™ is like having an information center in your pocket. This four band, 6 channel crystal controlled scanner has patented Track Tuning on UHF. Scan Delay and Channel Lockout. Measures 2¾ x 6¼ x 1." Includes rubber ducky antenna. Order crystal certificate for each channel. Made in Japan.

Fanon Slimline 6-HLU

List price $169.95/**CE price $104.00**

Low cost 6-channel, 4-band scanner!

The *Fanon* Slimline 6-HLU gives you six channels of crystal controlled excitement. Unique Automatic Peak Tuning Circuit adjusts the receiver front end for maximum sensitivity across the entire UHF band. Individual channel lockout switches. Frequency range 30-50, 146-175 and 450-512 MHz. Size 2¾ x6¼ x 1." Includes rubber ducky antenna. If you *don't* need the UHF band, get the **Fanon model 6-HL** for $94.00 each, and save money. Same high performance and features as the model HLU without the UHF band. Order crystal certificates for each channel. Made in Japan.

OTHER SCANNERS & ACCESSORIES

***NEW!* Regency‡ D810 Scanner**	$259.00
***NEW!* Regency‡ D300 Scanner**	$199.00
***NEW!* Regency‡ D100 Scanner**	$159.00
Regency‡ M400 Scanner	$229.00
Regency‡ M100 Scanner	$195.00
SCMA-6 Fanon Mobile Adapter/Battery Charger	$49.00
CHB-6 Fanon AC Adapter/Battery Charger	$15.00
CAT-6 Fanon carrying case with belt clip	$15.00
AUC-3 Fanon auto lighter adapter/Battery Charger	$15.00
PSK-6 Base Power Supply/Bracket for SCMA-6	$20.00
SP50 *Bearcat* AC Adapter	$9.00
SP51 *Bearcat* Battery Charger	$9.00
SP58 *Bearcat* 4-6 ThinScan™ carrying case	$12.00
FB-E Frequency Directory for Eastern U.S.A.	$12.00
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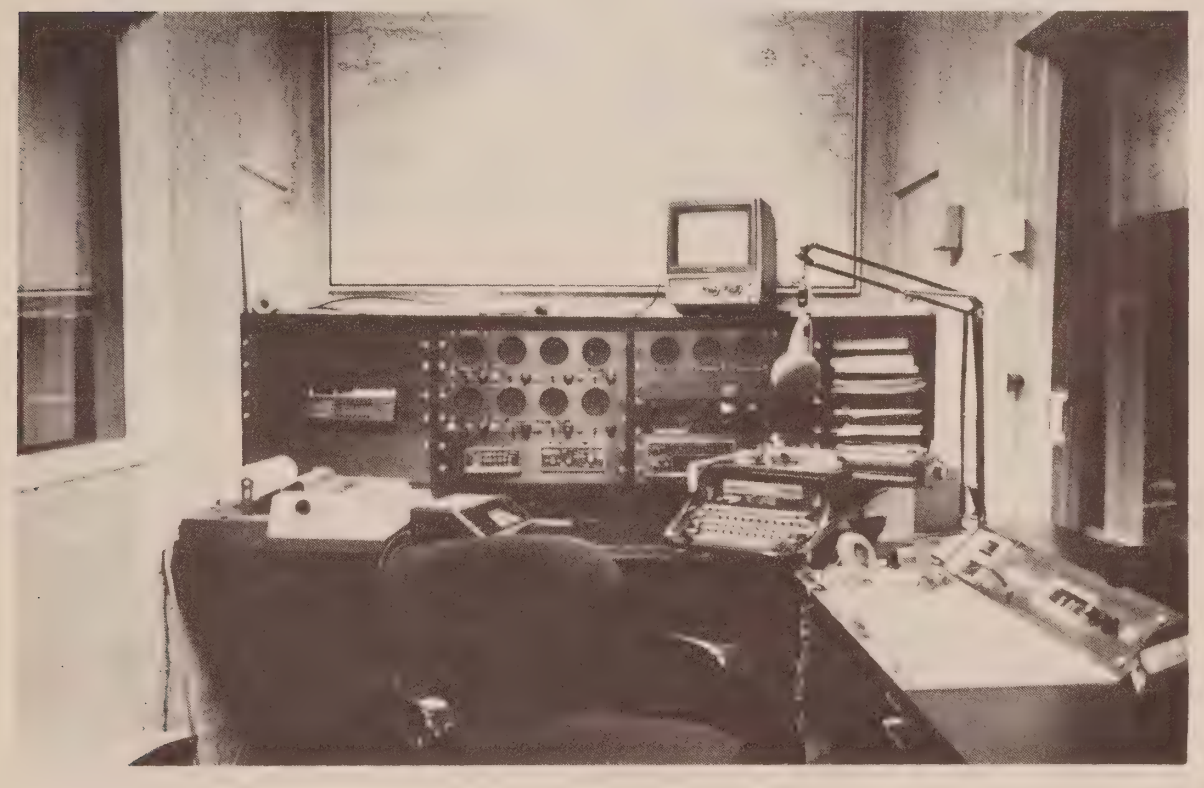
Send photographs of custom monitor listening posts, unusual or extensive monitor or two-way antenna systems, user station consoles (PD, Fire, Paramedics, etc.) or other monitor/two-way related equipment of interest. Photographs must be 3 x 5 inches or larger, black-and-white with good contrast, sharply focused and attractively composed. Each photo must be accompanied by details and explanations of equipment. Photos will not be returned. If you have questions, write first and please include an SASE. Send photos or write to:

Hugh Stegman, 11622 Exposition Blvd., #2, Los Angeles, CA 90064

Greetings from Lotus Land!

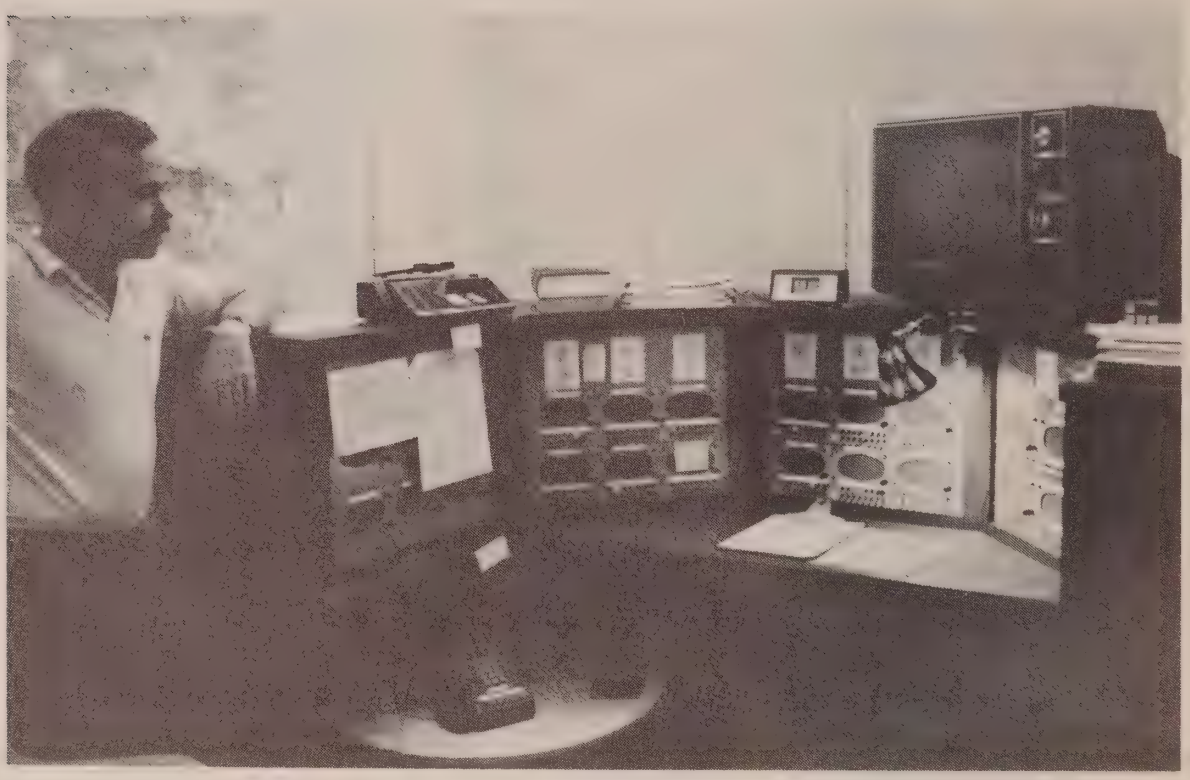
No member contributions yet, so I'll dip into my own files. This month we'll see how high tech has transformed the news business. The traditional image of note pads and green eyeshades has given way to electronic cameras, CRT terminals, and scanners!



First we see Traffic and Weather Central, located in the Hollywood studios of KNX Newsradio. Anyone mad enough to brave L.A. freeways at rush hour knows this as the source of Bill Keene's timely traffic reports and off-the-cuff humor. Bill does his legendary reports live from the announcing desk at the right, while CHP and LAPD audio issue from the rows of speakers to the rear. Bearcat and Regency crystal scanners pick up emergency and air-to-air channels, with conversation between the various aircraft above the freeways often being the first source of info. A BC 210 and a Regency programmable are also used. Teleprinters (only one visible) receive latest NOAA weather forecasts and Caltrans traffic computer printouts.

The next photo shows the state-of-the-art monitoring post used by KNX's sister CBS affiliate, KNXT-TV, whose Channel 2 News operation shares the historic Columbia Square quarters. As far as I know, this is the first look the public has ever had at this custom built facility for keeping tabs on breaking news stories. Each modular unit is a separate 8-channel scanner dedicated to a different agency and/or frequency band. 17 of these are up and working now, with room left for 13 more. The real guts are up on the roof, however, where separate G.E. receivers handle RF and IF. The system thus combines the best features of base radios and scanners, with performance and audio clarity far surpassing any gear available to consumers. Technicians are currently eliminating the last bugs, some intermod and CTCSS tones in the audio.

Note the trusty BC 210 sitting atop this dream setup. It has been pressed into service until a programmable can be permanently installed. Satellite receivers are also planned.



Columbia Square's antenna farm reflects the needs of the modern news operation, which combines monitoring with voice communication and live feeds from field units. Radio reports are sent back over the regular UHF repeaters, but TV uses microwave links. These are among those served by the dishes at the right. Special thanks to Bob Sims at KNX and Dave Conant of KNXT for their permission to run these photos.

Here we see a repeater site high above L.A. (not CBS - just a repeater site). Those who think it looks like an old oil derrick are right. When others in the Baldwin Hills oil field were removed, this one was saved by radio users liking its location. Those who think the star-shaped object atop the rig is some kind of experimental loop antenna are wrong, however. It is indeed a star, lighting up at Christmas time and rotating on its motorized base. Radiating lines aren't guy wires but red light strings. The thing makes a huge tree visible for many miles. Does anyone else have such a freaky radio setup in their area, or is this yet another "only-in-L.A." trip?

That's it for this month. 73, and let's see YOUR pictures.

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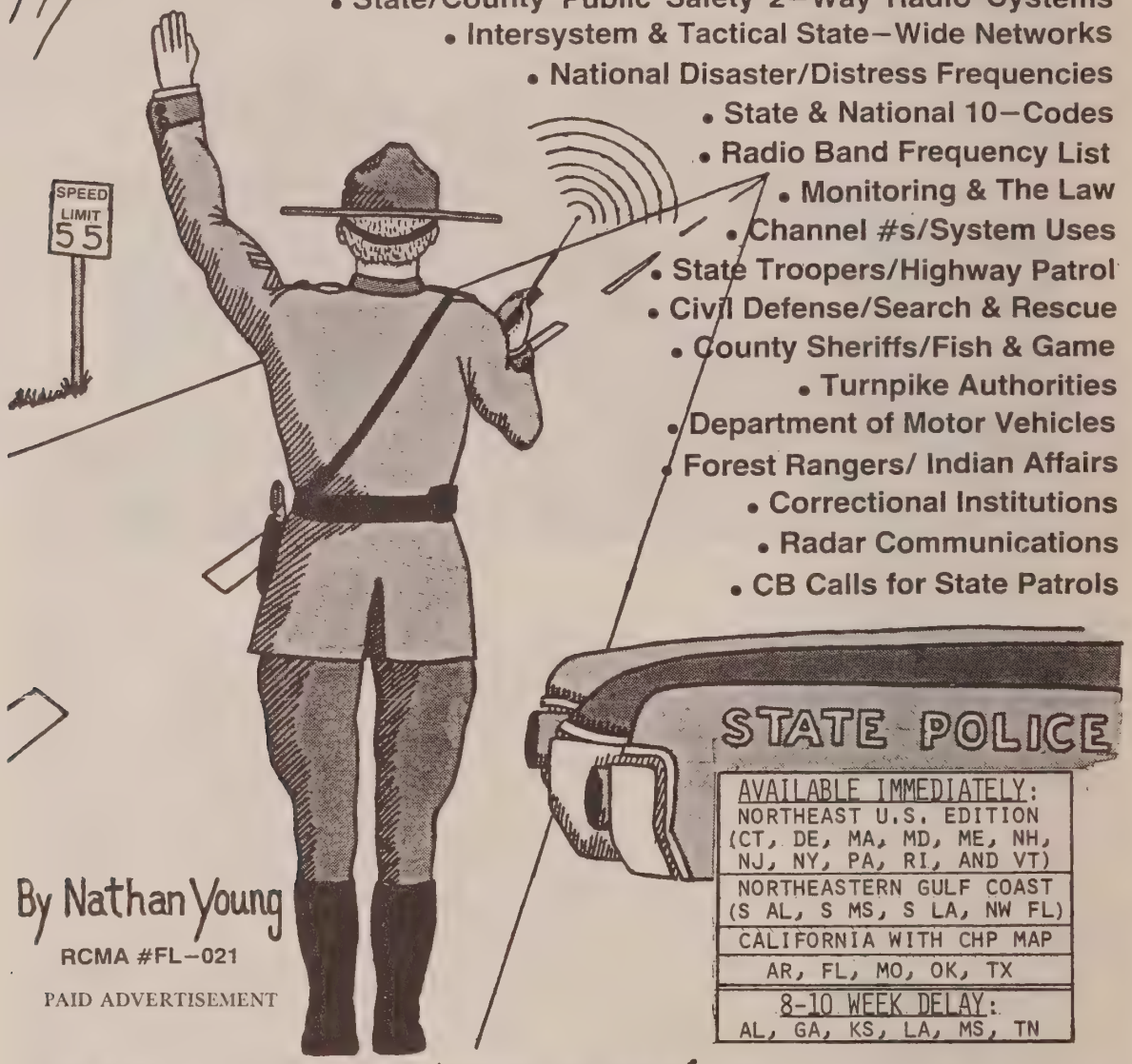

By Nathan Young

RCMA #FL–021

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LOW BAND SKIP

Send reports of distant stations received on the 30-50 MHz Band, as well as: information; comments; suggestions; question; and any items of interest regarding Low Band Dxing to:

Mike Britt, 14631 Yorba Street, Tustin, CA 92680.

Greetings!

Skip has proven to be quite active these past few months, with a wide variety of propagation signals having been received across the North American continent. This summer produced lots of Es skip, much of it short range (distances far less than 1,000 miles). The north - south path skip once again proved to be the most consistant of all the propagation during the summer months. Here in southern California, South America was heard daily, with strong signals as high as 39 MHz on a few occasions.

CLARIFICATION: RECEPTION REPORTS and SEC. 605 of THE COMMUNICATIONS ACT OF 1934.

It is necessary for me, as editor of this column, to clear up any misunderstandings which may have resulted from certain statements made in last month's column in requard to the publication of information from radio communications received as the result of radio wave propagation.

First, let me make it clear that, at no time, have I had any intention whatsoever of straying from the legal boundries set by the Federal Communications Commission to prevent unauthorized publication or use of Communications. To that end, I will publically state that I will not knowingly be a party to the printed discussion of any material which might be in conflict with the goals and/or club policy of the Radio Communications Monitoring Association. Further, I will not contribute to any publication of material considered "unauthorized", as given by the Communications Act of 1934, Title 47, Section 605.

The above relates specifically to the last paragraph which appeared on page 50 of the September, 1982 RCMA newsletter. I hereby declare invalid any statement made by myself in the September 1982 RCMA newsletter which was related to the "direct quotation" of material or statements broadcast over the radio. The problem here is that I failed to do my homework before I thought up a new method of reporting skips. In my opinion, to directly quote the contents of a specific broadcast, would indeed be a violation of the Communications Act if said material were to be printed in the newsletter. However, I do not feel it would be in violation to print the call signs and statements of identification, as these are indeed considered public information, and can not be held as revealing the content of a particular transmission.

My only intent, in relation to the reporting of traffic heard, was to somehow assure the accuracy and validity of reception reports which appear in this column. After all, anyone could simply go through a frequency directory and write down the information without actually having heard a skip - not that anyone in this club would go so far as to do such a thing, of course. I still believe there is no harm in indicating something about what it was you heard - such as "heard fire units at 5- alarm fire". What I had not considered was the possibility that someone might actually quote info. of a personal or confidential nature. To do such a thing would not only be illegal, but in extremely poor taste!

For the record, the guidelines for skip reports are reprinted below. The only change, as far as the content is concerned, is #7, which is reworded so as not to mislead anyone. I express may deepest apologies to all those who may have had a concern in this matter.(Is the FCC reading this??).

RADIO COMMUNICATIONS MONITORING ASSOCIATION
LOW BAND SKIP COLUMN

Propagation Above 30 MHz

Documentation proceedures for 'skip reception reports'

to be published in the Low Band Skip column of the RCMA newsletter

New Guidelines - effective August, 1982

Skip reception reports may be typed or printed. At the top of each page, list your NAME, RCMA membership NUMBER, and the location where the skips were received. Also indicate the type of receiver(if more than one receiver used, indicate separately under each entry), and any special conditions which may have played a part in your reception of the skip activity(eg: severe storm activity, flock of birds on antenna, meteor landed in neighbor's yard).

TYPED REPORTS - must be on the appropriate 8½"X11" paper, and the column width MUST NOT exceed seven inches (anything beyond that will not appear when reproduced for the newsletter). Single space each entry, and double space between entries.

PRINTED REPORTS - should be on 8½"X11" paper. Lined (college rule)paper is recommended. Skip a space between entries.

CONTENT - Each entry should contain the following information:

1. Frequency (in MHz or KHz).
1A. Indicate if base (b), mobile (m), or both (b/m). Also indicate repeater input (Rin), or output (Rout), if applicable.
2. Type of service heard (if known). If a U.S. transmission, indicate if service heard was not same allocated for that freq. If a foreign skip, indicate the language of broadcast (if known).
3. The call sign. If actually heard, indicate with quotes..."KGC676" If known, but not heard, indicate in parentheses. (KGC676)
If unknown, indicate so (?,?).
4. Location of origin of transmission (if known).
4A. Distance of location of origin from location of reception (OPTIONAL).
5. TIME at which transmission was received. List in 24:00 hours. Indicate time zone. Differentiate between Standard and Daylight time (U.S.) Times may be indicated in G.M.T. or C.U.T.
6. Date of reception. Indicate numerically...(11/1/82).
7. Station ID, unit ID, etc., used to verify transmitting station.
8. Any comments or special notations you may wish to make.

EXAMPLE:

46.14 b/m Fire "KSQ723" Fayetteville, N.Y. approx. 2,500 mi. 10:04 PST 11/5/81
"KSQ 723" - all Fayetteville monitors ID'ed.

From Across the Atlantic...

One of RCMA's British members, Geoff Halligey (ENGL-005) was kind enough to respond to my recent request for information about the low band and skip in areas outside the continental United States. Geoff presents the following bit of info.:

"In the U.K., TV transmissions occupy the band 41.5 to 66.75 MHz. 30 to 40 MHz is little used, except for hospital pager tones on 31.750. These pagers merely activate a personal receiver, alerting the doctor or whoever to get to the nearest phone..."

"Commencing this year, however, these low band TVs are being phased out, and should be completely cleared by 1986. It is likely that the existing phone patch network from autos to well sited base stations connecting the public telephone system will be allocated part of the low band to meet a considerable unsatisfied demand, when the TV stations have disappeared."

Well, if Geoff's prediction is correct, perhaps the next skip cycle will see British phone conversations skipping to the east coast of North America. At least it's fun to imagine being able to hear some "colourful" conversations from the U.K.

As to low band skip, Geoff notes that the majority of the scanners available in the U.K. do not cover the 30 to 40 MHz frequency range, making it difficult to tune in the propagation which might be heard on these frequencies. However, using a Patrolman (sold by Radio Shack) Geoff has been able to pick up skip from Europe. He states:

"I can pick up Polish and French military (or police ?), and French TV transmissions (30 to 41 MHz) in winter day time. The Polish transmissions were especially numerous when the Solidarity movement in Poland was under suppression earlier this year."

Geoff has also heard what are clearly American accents in tranmissions which are probably from U.S. forces stationed in West Germany. He explains,

"These transmissions are on two broad frequency bands, centered on 30,200 KHz (measured on a Drake R7) and 37,650 KHz (guesstimated on the Patrolman)...Both transmissions clearly emanate from two groups of telephone exchanges and consist of calling tones and operators' voices (usually female). As there are several exchanges on the same frequency at the same time, it is only occasionally that a few words of clear speech emerge from the jumble of tones and voices."

"Thus I might hear '2192?'.....'2401 on the line'.....'did you get it?'... but so far never enough (conversation) to aid identification."

Information which I have indicates that the U.S. Military in West Germany does indeed use quite a few frequencies on the low band. As a matter of fact, some RCMA members in the continental United States have reported receiving skip from U. S. military bases in W. Germany in the past.

A listing of many of the low band frequencies used by the military, compiled by George DuBois (OR-001) a few years back, shows no stations listed specifically as telephone links. However, the U.S. military is active on several freq.s very close to those Geoff indicated that he estimated. On 30.25 MHz; U.S. Army heliport, Friedrichfeld, W. Germany - listed as an 'air-to-ground' channel. Numerous U.S. Army airfeilds operate on 30.60 MHz; several stations are on 30.75 and 30.80 MHz as well. Additionally, several dozen airfeilds share a common tower freq. of 31.80.

On 37 MHz: several airfeilds and heliports are on 37.40 and 37.60 MHz. These, like many of the stations on the 32 MHz channels, are shown as being 'air-to-ground' channels. I do not known what type of communications are going from the air to the ground and vice versa...perhaps these are operational channels. Geoff asks if other RCMA members might have further clues about the transmissions he has received. Maybe some of you military buffs know more about these European radio operations. Please address your comments to this editor.

Dx Between 50 and 88 MHz Also Welcome

I should have mentioned before that foreign low band skip (heard on bands such as the 66-88 MHz range in the U.K.) is indeed welcome in this column. After all, RCMA is an international club, so other parts of the world which do not utilize much of the 30 to 50 MHz range shouldn't be left out. If you live somewhere other than the U.S.A., and you listern to a "low band" other than 30-50 MHz - then I invite you to write and share what Dx signals you have heard on those frequencies. Although I doubt that the MUF will rise above 50 MHz for any great length of time in the next few years, it is possible that skip could occur as high as the TV and FM broadcasts bands this winter. If you wish to be specific, please list times in G.M.T. (Coordinated Universal Time, if you are converted). Frequencies may be given in KHz or MHz. (Sounds like I'm turning this into a QSL report!).

Provincial Skip

If you are located in North America, don't miss the opportunity to listen to some Canadain Dx, assuming we have strong skip this winter. Although use of the VHF-Lo band in Canada is somewhat limited, there are some freq.s which are usually active. The best bet is the Ontario Provincial Police (O.P.P.), most active on the paired channels of 41.96 (b)/42.02(m), and 42.06 (b)/42.22(m).

Unfortunately, this winter may be the last time the O.P.P. can be heard on the low band, as I understand the switchover to Hi-band is already underway.

I have been in contact with several Canadain members as of late, and from what they have related to me, I am able to conclude that the low band is used more in the eastern provinces than in the west. Here in the West, skip transmissions in French have been received from the province of Quebec on a number of frequencies. I first stumbled across these French signals mixed in with East coast fire traffic on the 46 MHz fire band during the strong activity of 1979.

In refrence to the O.P.P., much information about this agency, it's operations, and radio system, has appeared in past Canada columns in this newsletter. It is well worth your while to read this column in detail each month if you are at all interested in what's happening in that part of North America. For that matter, it is well worth your while to read every column in detail, for you never know where valuable information may be hiding (re: some of the most interesting skip tid-bits have appeared in other columns!).

Low Band Images - update

In the June 1982 Low Band Skip column, I discussed the image frequency pattern found on the VHF-Lo band of Bearcat programmable scanners. That discussion centered on only those Bearcats which have an Intermediate Frequency (IF) of 10.8 MHz. However, the formulas which I introduced in June can also be applied to scanners with different IFs, in order to determine image frequencies. The following is a review of how to determine image frequencies.

The majority of programmable scanners on the market, other than those made by Electra, have an intermediate frequency of 10.7 MHz. With the exception of the early model BC-250, all other Bearcats have an IF of 10.8 MHz. The original model BC-250 has an IF of 10.85 MHz.

Recall that images, produced by the scanner's oscillator, follow a different pattern on the VHF-Lo Band than on the VHF-Hi or UHF bands. For the Hi and UHF range, the image (i) of a "true" frequency (f) can be found by doubling the IF and adding that number to the number of the actual ("true") frequency;

for scanners with a 10.7 IF: $i = 21.4 + f$
for scanners with a 10.8 IF: $i = 21.6 + f$
for scanners with a 10.85 IF: $i = 21.7 + f$

Example A: find the image of 460.3 MHz on a BC-220 (10.8 IF):

$$i = 21.6 + 460.3 = \underline{481.9 \text{ MHz}}$$

Example B: find the image of 460.3 MHz on a BC-250 with an IF of 10.85 MHz:

$$i = 21.7 + 460.3 = \underline{482.0 \text{ MHz}}$$

To find a "true" frequency from a known image frequency, simply use the inverse; double the IF and subtract that number from the image frequency to get the "true" frequency of the broadcast.

The formulas for determining low band image frequencies are somewhat more complex, although they are also based upon a multiple of the IF. Recall that a formula constant is obtained by tripling the IF number (3xIF). The formula for determing the image frequency of a known "true" low band frequency is then represented by:

$$i = [f-(3xIF)\div 2]+(3xIF)$$

by substituting in the IF numbers we obtain three working formulas:

$i = [(f-32.1)\div 2]+32.1$ for scanners with a 10.7 IF
$i = [(f-32.4)\div 2]+32.4$ for scanners with a 10.8 IF
$i = [(f-32.55)\div 2]+32.55$ for scanners with a 10.85 IF

ExampleC: find the image of 42.40 on a Bearcat 210:

$$i = [(42.4-32.4)\div 2]+32.4 = \underline{37.4 \text{ MHz}}$$

ExampleD: find the image of 42.40 on a Bearcat 250 with a 10.85 IF:

$$i = [(42.4-32.55)\div 2]+32.55 = \underline{37.475 \text{ MHz}}$$

More important than the above formulas are the formulas which allow a "true" frequency to be determined from a known (or suspected) image frequency. The basic formula is: $f=[i-(3xIF)x2]+(3xIF)$

again, by substituting the proper IF into the basic formula, we obtain three working formulas:

$f=[(i-32.1)x2]+32.1$ for scanners with a 10.7 IF
$f=[(i-32.4)x2]+32.4$ for scanners with a 10.8 IF
$f=[(i-32.55)x2]+32.55$ for scanners with a 10.85 IF

Example E: on a BC-210, you hear a Spanish transmission on 33.74. It can be proven that this is actually an image by using the formula as follows: $f=[(33.74-32.4)x2]+32.4 = \underline{35.08}$, which is a confirmed Argentina skip freq.

Example F: On a BC-250, with a 10.85 IF, you hear a Spanish transmission on 33.82 MHz. By checking above and below this freq., it can be determined that the signal is strongest on 33.815. Use the formula to confirm that this is actually an image:
$f=[(33.815-32.55)\ x2]+32.55=\underline{35.08}$, the confirmed Argentina freq.
*Note that if 33.82 was used in the formula, an incorrect freq. of 35.09 would be the solution.

This formula can also be used for the 66-88 MHz range on European scannners, such as the BC-220FB.

Example G: In Northern Ireland, a local police freq. of 101.925 MHz is received on 67.1625 on a BC-220FB. Using the formula from Examples E & F, it can be proven that the signal heard on 67.1625 is an image produced by the scanner itself:
$f=[(67.1625-32.4)x2]+32.4 = \underline{101.925\ MHz}$

As previously mentioned, these formulas can be applied to some other scanners besides those made by Electra. An example is the JIL SX-200, which has an IF of 10.7 MHz.

Example H: The same information from example G, however, in this case the signal from 101.925 is received on 67.0125. Because the IFs differ between the BC-220 and the sx-200, the image freq.s also differ. $f=[(67.0125-32.1)x2]+32.1 = \underline{101.925}$

It becomes obvious that these formula can be used to accurately tune your scanner out of band above the normal low band limit. Keep in mind however, that your scanner's reception may be affected by harmonics other than those directly related to these formulas. The commercial broadcast band is a prime example of an out of band signal which can be received via the second or third harmonic.

You may be wondering just what all this has to do with skip. Well, I continue to receive inquiries about skips received on strange frequencies, which in fact can be explained by the image frequency pattern at least 90% of the time. If every member were to read this short article about images, then we would see much less confusion about state PDs being heard on 37 MHz (images of 42 MHz), about oil co.s being heard on the 33 MHz fire freqs (images of 35 MHz), and every other strange reception which is actually an image.

Great Lakes Dx

Word comes from John Arendt (IL-012)("greeting from Oswego" fame) that this summer brought some skip to northern Illinois, including reception from a state rarely heard on the low band. John says, "'M.P. HQ' was heard calling 'unit 13' on 42.560 at 19:33 CDT. Positive ID of KAD 763was given...(this) belongs to the state of North Dakota at Devils Lake."

John also tells of receiving the California Highway Patrol on the evening of 7-18-82. He apparently heard from both the Los Angeles Central and Barstow Central dispatches on 42.50 and 42.56(LA),&42.56(Barstow). As he puts it, "weather conditions and associated fronts are proving to be a bonanza for low band skip here at this location."

Es skip was also present here in California during July and August. Reception of northen Calif. on frequencies above 40 MHz occurred several times here in the

southern portion of the golden state. Here in Orange County, the C.H.P.'s Santa Ana Central dispatch received units from literally every dispatch area which operates on the "purple" channel in the state. Traffic on the 42.16(a)/42.40(b) channel came from as far as the Yreka office, near the Oregon border.

The following is an example of some typical Es skips from this past summer. These were received in Tustin, Ca. on a BC-210 connected to an external low band antenna.

from Mike (CA-OR-204):

46.06 Fire (KXA243) Richmond, Ca. 380 mi. 10:30PDT 7/9/82
R "Richmond...Engine 10 is unable to locate; returning to quarters."
out

42.34 C.H.P. "KME379" Ukiah, Ca. 475 mi. 10:45PDT 7/9/82
B "We're picking up El Centro and Chico"..."KME 319"

46.38 Fire (KMF371) Contra Costa Co., Ca. 375 mi. 10:50PDT 7/9/82
B/M "... the ridge behind Park Street Mobile Home Park; map coordinates: P-paul 22, 27-9. I will be advising C.D.F. on this."

42.34 C.H.P. "KMD 496" Willows, Ca. 470 mi. 10:51 PDT 7/9/82
B "KMD 496" (Note: Chico CHP office).

46.46 Fire (KMA526) San Francisco, Ca. 370 mi. 10:55PDT 7/9/82
B/M "...a washdown. Respond on control 1."

"Medical aid: box 8133; Arlington and Miguel, for Engine 32. Respond on control 3."

42.34 C.H.P. "KDG271" Alturas, Ca. 545 mi. 11:07PDT 7/9/82
B "10-4, '61. KDG 271"

42.18 C.H.P. (KA4993) El Centro, Ca. 150 mi. 11:14PDT 7/9/82
M "El Centro, 85-44"

The Sound of Silence - 33.48 (33.475)

In the Contact/Info Wanted column of the January, 1982 newsletter, there appeared a request from Paul (MA-082) for other RCMA members to monitor the frequency of 33.48 MHz. This New England member explained that 33.48, "... is a frequency recently assigned to the Athol Fire Department, and they are having a problem with unsquelchable carriers and skip. Or something!"

Here we have a mystery, the explanation to which lies with the "or something" mentioned above. This "unsquechable carrier" which was causing interference problems in Massachusetts is no doubt the same skip which has been received across the North American continent. To my knowledge, no one in North America has yet been able to positively ID what or where this constant carrier is originating from. The following information is known:

- This signal is definitely a skip, as it is only heard when skip is 'in'. It tends to follow the same patterns as other F-layer skips heard in North America. It has been received whenever F-2 skip was strong, however, this editor is not aware of it having been received via Es skip or any other shorter distance propagation conditions. Common charactoristics are a strong signal for several hours during morning and afternoon hours, with occasional fading. Signal strength was very strong last winter when a F-2 peak occurred.

- It has been determined that the signal is actually on 33.475 MHz, although, in the past, the strength of the transmissions have been strong enough to interfer, and even override North American fire traffic on 33.48 MHz.

- The signal is a constant carrier, sounding very much like an open mike, or perhaps resembling a "birdie" common on scanning receivers. Voice traffic seems to be either non-existant, or very rare at least.

- As this skip has been received by RCMA members in all parts of the mainland U.S. (both East and West coasts), it must be following a south-to-north path of travel. Most likely the origin is somewhere in South America.

The absence of any voice traffic is what has made this skip so difficult to ID. If it is a non-voice transmitter, the use is certainly beyond me. There are no tones or signals heard either - just very strong silence (you might call that "full quieting"). The following insights about this particular mystery are provided by George DuBois (OR-001), RCMA's FCC Topics editor:

"The 33.475 is no doubt a fixed circut, and undoubtedly it has to be from South America. The key to finding the other side of the circut (the "input"), of course means IDing any traffic (which might be heard)..."

Adding to the confusion are some other non-fire traffic transmissions which have been heard on 33.48. In the summer of 1980, Andy (GA-015) reported receiving what he beleived was a French speaking service on 33.48. I, myself have heard some sort of repeater on this frequency which I cannot ID. This may be the same repeater heard by George DuBois in Oregon. He has received this business station during the F-2 season, and describes it as sounding "like a man and wife-type concern". Unfortunately, they never IDed. George says that the FCC allows repeaters in the Business and Special Industrial services outside the continental U.S. (Alaska, Hawaii, and the territories), however, this isn't an IB frequency. Perhaps it is from Canada or some other english speaking area.

So, the 33.48/33.475 mystery continues. Your homework assignment for this winter is, of course, to listen to this freq. (these frequencies) and see if you can't discover the answer. If you know any more about these strange receptions, please drop me a note in the mail. You may have that "or something" which will provide the solution.

Maryland Español

I received a card from Richard Singer, Jr. (MD-068) who advised he had received Spanish on the following freq.s: 33.74, 33.80, 33.82, 33.84, 33.86, 33.88, 33.90, 39.88, and 46.42. Although I can't say for certain without more info (receiver used), I suspect that most of these on 33 MHz are actually images of the Argentine pagers heard on 35MHz (eg: 33.74 = 35.08; 33.84 = 35.28; 33.86 = 35.32). I do know that Spanish has been heard on 33.90 (input for the South American repeater on 36.90), and Spanish has been reported in the past as being heard on 33.82 and 33.88, although I personally have never received these and have not received any varification from others. As for 39.88, I have no record of this. 46.42 is most likely from Argentina once again.

WHOOPS!

This time, it really wasn't my fault. I could keep my mouth shut and only the managing editor and myself would know that an entire page was missing from my August column (witness, no '73' salutation, as it was the last page). I only bring this up because I feel I owe an apology to Hugh Stegman (CA-LA-472), for it was information from his letter that I had discussed. To highlight; I'm sure most of you in S. California are aware of the skip which has plauged the L.A.F.D. Probably most often heard is "Westmoreland 911", from Westmoreland County, Pa. Westmoreland Emergency Management dispatches on the same freq. as the L.A.F.D. Metro dispatch, namely 33.70 MHz. Those of you in Penna. may have heard the ID of "O.C.D.", which is of course Los Angeles.

Gone Ficheing

At last my new 1982 F.C.C. microfiche arrived from N,T.I.S. Now it's going to take me several days to confirm and ID all the "W" and four-letter calls which I have logged. Pike Co., Pa. is KGG867, and -guess what- WQ0786 isn't listed! Time to start matching up letters which sound similar. This brings me to the fact that Nashville, Tenn. is no longer listed for 33.90, so I assume that they no longer use the low band at all. Also refrence the 33.90 list, I misspelled Byesville, Ohio by adding an extra "r". And if you really want accuracy, I suppose I should tell you to eliminate Opelousas H.H.L.C., La. from the list, as that was merely coded material.

Next month, information about "Mail-A-Prop", for those of you who are interest- in real propagation forecasting (see Robert Horvitz's summary of the ANARC-82 convention, ANARC News, at the front of this issue of the newsletter). Until then, I wish you all good Dxing! 73, Mike

Railroads

Gary L. Sturm and
Bill Farmer, Editors

Send information about railroad frequencies and their uses, railroad radio system details, and related questions to:
Gary L. Sturm, 48781 Denton Rd., Apt. 37, Belleville, MI 48111.

Greetings—this month we have some listings from a Canadian contributor who will remain anonymous, and the second part of our article on the various uses of VHF radio by the railroads. First the listings:

CP RAIL

Systemwide	161.475	Road
	161.535	Dispatcher
	161.475/160.425	Road-Tunnel Repeater
	161.115	Yard
	161.175	Maintenance of Way
Montreal Area	160.425/160.635	Terminal Repeater
	161.175/160.185	Maintenance of Way
	159.930	Hump Cab Signals
	160.995	Hump
	160.275	Diesel Shop
	160.515	Harbor Commission
	160.755/161.505	Car Department
	161.145	Piggyback
	159.885	CP Police
	160.545	CP/CN Police
	159.540	Smith Transport (Trucking)
	160.050	Smith Transport (Trucking)
Cote St. Paul	161.265	Yard
Glen	160.335	Car Department
	161.265	Yard
Hochelaga	160.725	Yard
Outremont	160.815	Yard
St. Luc	160.845	Yard
St. Therese	161.355	Yard
Toronto Area	160.050	Car Inspectors
	160.755/159.930	Car Department
	160.335	Diesel Shop
	160.425	Hump Yardmaster
	160.815	Hump Yardmaster
	160.245	Car Placement/Piggyback
	160.275	Yard
	160.725	Yard
	161.325	Yard
	159.885	Police
	160.545	CP/CN Police
Cambridge	160.845	Yard
Obisco	161.145	Yard
Oshawa	160.995	Yard

ONTARIO NORTHLAND

	160.545	Road
	160.545/161.265	Dispatcher & Road Repeater
	160.995	Yard

GREATER WINNIPEG WATER DISTRICT RAILWAY

	167.670/169.590	Dispatcher
	158.190	Road & Yard

WHAT DO THE CHANNEL DESIGNATIONS MEAN?—Part II

Last month we covered the most important types of channels: road, dispatcher, PBX and others. This month we conclude with several of the other channel uses that are found on the railroads.

CAR DEPARTMENT

At each yard or terminal, the cars of arriving and departing trains must be inspected to be sure they are in good condition (no hot boxes, brakes functioning properly, etc.) This is the job of the car department, or mechanical department. Most large yards have at least one radio channel assigned exclusively for the car department. Some yards are more than three miles long, and because of the low power and short range of paksets, repeater stations are used to the extent necessary in order to provide the required coverage. In these installations, the antenna height and transmitter power of the repeaters are established on the basis of the area to be covered; therefore the transmissions are normally confined to the yard with a very restricted overlap into the area outside of the yard limits.

DIESEL SHOP

Many of the larger railroads have their own locomotive rebuilding facilities at one or more points along their lines. These shops are usually quite active and often have pakset/repeater systems similar to the car department systems, but on their own channels.

STORES DEPARTMENT

The "supply room" at a large repair facility is often a separate department called the stores department. It supplies repair parts and materials to the shop workers. Some of the larger stores departments have their own exclusive radio channels. Again, pakset/repeater systems are sometimes used.

POLICE

Most railroads of any size have their own police departments. The most common term for a railroad police officer is "special agent". They are most active in the larger cities where crime is more of a problem. Usually their vehicles are equipped with the road channel so they can communicate with trains, and often they have a separate police channel as well. Sometimes there is even a full time police dispatcher, such as Southern Pacific has in Los Angeles on 161.220. There are also certain cities, such as Chicago and St. Louis, where the police departments of various railroads are coordinating their efforts by using a "mutual aid" channel, 161.205 MHz.

COMMUTER

There are a few areas where commuter trains carry large numbers of passengers into and out of downtown areas. Some of the more heavily traveled commuter railroads have a special channel for the commuter trains, separate from the regular road channel. Probably the three most important are: Conrail, between New York and New Haven, 161.280; Chicago & North Western, in the Chicago area, 161.040; and Illinois Central Gulf, also in the Chicago area, 161.025.

PIGGYBACK

One of the biggest successes of the freight railroads in recent years has been the increase in piggyback traffic, where semi-trailers are carried cross-country on railroad flat cars, then delivered over surface streets to their final destinations. Large piggyback terminals have sprung up, where trailers are loaded onto, and unloaded

from, railroad cars. Originally the loading was done by having the truck tractors drive the trailers up ramps onto the cars, but more modern piggyback terminals are now using cranes to lift the trailers from the ground to the flat cars and back again. The term "ramp" is still in use however. Large piggyback facilities usually have at least one exclusive radio channel. The employees who secure the trailers to the flat cars use it to keep in contact with their office and the crane operators. In other cases, remote control cranes are used, operated by employees on the ground via radio.

TRUCKING

Several railroads have their own subsidiary trucking companies to deliver freight to customers which are not served by rail directly. Like most trucking companies, these companies have their own truck dispatchers who keep in touch with the trucks by radio. Frequencies Frequencies used are sometimes in the railroad band and sometimes in the trucking band. Although technically not railroad operations, we sometimes list them as a matter of interest. For example, Southern Pacific's subsidiary Pacific Motor Trucking uses 160.320 in the Los Angeles area.

FREIGHT AGENTS

The freight agent is the railroad employee responsible for writing the waybills, which are the written instructions for the movement of each car. In days of old, each small town had a station and an agent. Today it is the trend to close down the smaller station agencies, and to have the agents handle a large area from a central location. Much of the work is done by telephone. In some areas, there are "traveling agents" who call on shippers in person, but still cover a large area. Their vehicles are equipped with mobile telephones or special channels in the railroad band so that shippers can contact them while they are away from their offices.

CLERKS

Although computers are now handling much of the work of keeping track of where each car is located on the railroad, it is still sometimes necessary to visually inspect or verify the consist of a train to determine what cars are present, and where in the train they are located. This is the job of the car clerks. In some of the larger terminals, they have handsets on a special channel so that they can communicate with the chief clerk or the yardmaster.

CREW CALLER

When a train is being made up and its departure time is established, it is the job of the crew dispatcher or crew caller to determine which crew will be assigned to handle the train, and to notify the crew members when to report for work. When the crew reports to the office, it is usually transported by company vehicle out to where the train is located in the yard. The vehicle, often called a carryall, is sometimes equipped with its own radio channel to keep in contact with the crew caller. In busy yards, with many arriving and departing trains, the carryall is kept quite busy, being dispatched by radio to various locations as if it were a taxi.

COMMISSARY

The commissary is a storehouse for food and beverage supplies, which are used on railroad dining cars. Since Amtrak has taken over almost all passenger train service, and has consolidated commissaries into just a few locations, there is not much use of radio for commissary service. However there are a few locations, such as Chicago, where Amtrak commissaries have their own radio channels. They are used to contact employees who haul supplies from the building out to dining and lounge cars in the yard.

WRECKER

A wrecker is a heavy crane which is used at the scene of derailments to lift cars and locomotives back onto the rails. Often hand signals are used to direct the crane operator, but radio communication can sometimes provide more detailed information about the delicate moves which must be made. A few railroads, such as Southern, have a special channel for use by their wreckers.

CAR FERRY

In a few locations, barges or ferryboats are used to move railroad cars across bodies of water. Much of the ferry activity occurs in the Great Lakes area, but there are other operations in such places as New York, British Columbia, and Newfoundland. Radio is used to coordinate the loading and unloading of rail car ferries and barges to be sure that the work is handled quickly and safely. At ports where the incidence of heavy fog is high during certain seasons of the year and hand signaling is useless, radio communication between a switchman on a car ferry and the locomotive engineer can eliminate the potential hazard of pushing the car ferry away from the dock and dropping the loading apron, cars and possibly crew members into the water.

ORE DOCKS

In the Great Lakes area, railroads are used to move large amounts of iron and other ores to water's edge. Here the ore is loaded onto ships for transportation to smelters in distant places. During the part of the year when the lakes are ice-free, ore loading operations proceed around the clock. Switch engines are busy shuttling cars back and forth on the docks to dump their contents in to the ships' holds. In some locations, radio channels are assigned for the exclusive use of these switch engines. Duluth/Superior is the busiest of these areas.

We hope this two-part article has been of some interest to those of you who were not familiar with the railroads' use of VHF radio. We invite you to write an article about your favorite railroad radio subject, or send us frequency information. At present we especially would like information on the following:

Conrail	Conway Yard channels (Pittsburgh)
Grand Trunk Western	Detroit UHF Police channels
Grand Trunk Western	Battle Creek, Pontiac & Port Huron yards
Illinois Central Gulf	yard channels systemwide
Louisville & Nashville	Nashville TN yard channels
Union Pacific	Hinkle Oregon and Kansas City
all	Memphis TN yard channels
all	Atlanta GA yard channels

Next month we'll have a short article on the use of microwave by the railroads.—Gary & Bill

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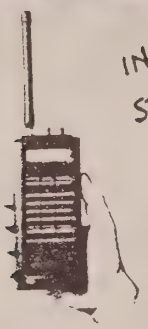
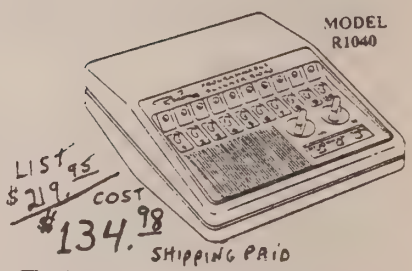


IN STOCK!

POLICE FIRE

SCANNERS



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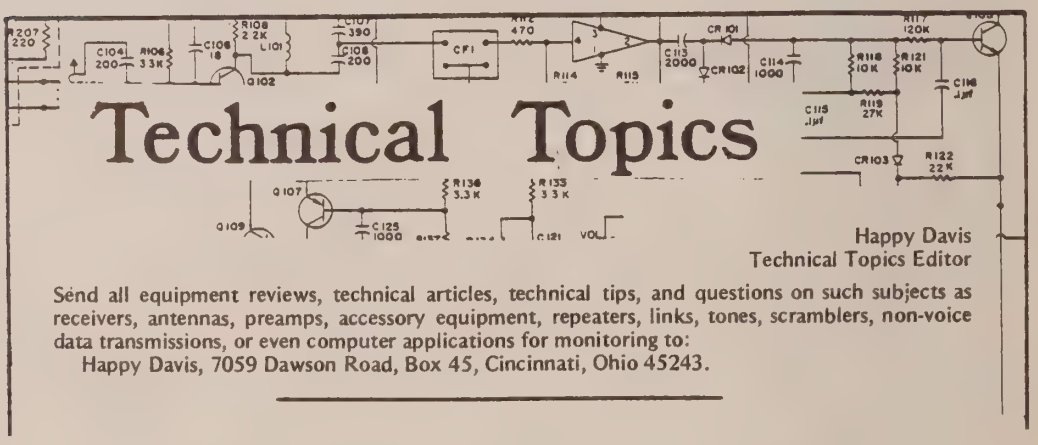


Technical Topics

Happy Davis
Technical Topics Editor

Send all equipment reviews, technical articles, technical tips, and questions on such subjects as receivers, antennas, preamps, accessory equipment, repeaters, links, tones, scramblers, non-voice data transmissions, or even computer applications for monitoring to:
Happy Davis, 7059 Dawson Road, Box 45, Cincinnati, Ohio 45243.

The article which appears in this issue's TECHNICAL TOPICS column was written by Rene (CA-SC-018) and furnished by RCMA's Public Safety - California editor, Mike Lussier. Thanks to both Rene and Mike.

For purposes of continuity and readibility, the material is begun on the following page..

Editor

COMPARATIVE ANTENNA/COAX CABLE PERFORMANCE

From RENE (CA-SC-018)

AVERAGE CARRIER LEVEL IN MICROVOLTS

TEST FREQ'Y / COAX	5094	MON-38	20-014	SCANNER BEAM
482.9625				
RG-8M/U	500	500	160	500
RG-6/U	600	550	400	600
162.40				
RG-8M/U	700	400	325	500
RG-6/U	900	500	500	600
55.25				
RG-8M/U	450	300	100	160
RG-6/U	500	350	225	375

ANTENNA

5094 — CHANNEL MASTER, OMNI-DIRECTIONAL, 30-50, 150-174, 420-512 MHz

MON-38 — ANTENNA SPECIALIST, SAME AS ABOVE

20-014 — ARCHER (RADIO SHACK) SAME AS ABOVE

SCANNER BEAM (ROTOR MOUNTED) — ROBERT GROVE, LOG PERIODIC, OMNI 30-50 MHz, DIRECTIONAL 108-512 MHz.

NOTE - ALL ANTENNAS ROOF MOUNTED 35 FEET ABOVE GROUND LEVEL

50 FT. COAX

RG-8M/U — COLUMBIA 01108 MINI 8/U

RG-6/U — CHANNEL MASTER FOAM SUPER COLOR DUCT 9539

TEST FREQ.	CALL SIGN	AGENCY
482.9625	KUI553	SUNNYVALE PUBLIC SAFETY DEPT. (POLICE)
LOC.& DISTANCE - SUNNYVALE, C.A. - 0.75 MILE		
162.40	KEC49	NATIONAL WEATHER SERVICE (N.O.A.A.)
LOC.& DISTANCE - MT. UMUNHUM - SANTA CLARA CO. C.A. - 16 MILES		
55.25	KTVU	T.V. CHAN. 2 - PICTURE CARRIER FREQUENCY (LOWEST ACTIVE FREQ. WITHIN TEST EQUIP. RANGE)
LOC.& DISTANCE - MT. SUTRO - SAN FRANCISCO, C.A. - 31 MILES		

TEST EQUIP. - JERROLD FIELD STRENGTH METER - MODEL AIM 718

FREQ. RANGE - No. 1, 54 to 216 MHz - No. 2, 470 to 890 MHz.

METER RANGE - 0 TO 2000 MICROVOLTS W/O ATTENUATORS - 20,000 MICROVOLTS W/X10 ATTENUATOR - 200,000 MICROVOLTS W/2 eq. X10 ATTENUATORS

PROCEDURE - FINE TUNED FOR MAXIMUM METER DEFLECTION AT 3 TEST FREQUENCIES

COAXIAL CABLE
dB LOSS PER 100 FEET.

RADIO SHACK	MHz. 30	50	57	85	100	177	200	213	300	400	500	800	900
RG-58/U		4.0			5.3		8.0			12.0			
RG-8/U		3.0			3.5		5.0			8.0			
RG-59/U		2.8			5.0		7.6			10.0			
RG-8/M		2.2			3.0		4.6			7.5			
CHAN. MAST.													
RG-59/U 9530			2.3	2.7		4.1		4.4			7.0	8.9	9.4
RG-59/U 9540			2.1	2.5		3.6		3.8			5.9	7.7	8.0
RG-6/U 9599			1.7	1.9		2.8		3.0			4.8	6.4	6.9
BELDEN													
(RG-59/U) 9297	3.0		4.1		5.9			9.0	11.0				
(RG-59/U) 9275	1.4		1.8		2.6			3.8	4.8				
(RG-6/U) 9383	1.2		1.5		2.1			3.1	3.8				
(RG-6A/U) 8215	0.75		1.0		1.5			2.2	2.8				

NOTE - 3dB IS 100% INCREASE IN GAIN.

BEARCAT BC210 AS A SIGNAL GENERATOR

AFTER A SCANNER IS PROGRAMMED FOR OUT-OF-BAND FREQUENCIES, THE FREQUENCIES THAT ARE DISPLAYED DO NOT ALWAYS SIGNIFY RECEPTION CAPABILITY. USING A BEARCAT BC210 AS A SIGNAL GENERATOR, THIS PROCEDURE WILL ALLOW YOU TO VERIFY ACTUAL RECEPTION OF THESE OUT-OF-BAND FREQUENCIES WITHIN CERTAIN LIMITS AS LISTED BELOW. RECEPTION OF IMAGE FREQUENCIES MAY ALSO BE VERIFIED, AS WELL AS DETERMINING WHETHER CRYSTALS ARE BAD OR OFF-FREQUENCY. SENSITIVITY MAY ALSO BE ESTIMATED BY VARYING THE

DISTANCE BETWEEN THE BC210 & THE SCANNER UNDER TEST.

BC 210		BC 210 AS SIGNAL GENERATOR
30-50MHz	-10.8MHz =	19.2 -39.2 MHz
146-174 "	- " " =	135.2 -163.2 "
416-512 "	- " " =	405.2-501.2* " (497.7*MHz)

*THIS FORMULA MAY ONLY BE VALID UP TO 508.5 MHz (-10.8MHz = 497.7MHz) WITH SOME BC 210'S.

PROCEDURE - PROGRAM DESIRED FREQUENCY INTO SCANNER BEING TESTED. ADD 10.8 MHz TO THE SAME FREQUENCY & PROGRAM IT INTO THE BC 210. EXAMPLE No.1 - PROGRAM OUT-OF-BAND FREQUENCY 135.2 MHz INTO SCANNER BEING TESTED. PROGRAM 146.0MHz (135.2+10.8MHz) INTO BC 210 (SIGNAL GENERATOR). BOTH SCANNERS SHOULD LOCK-IN, THEREBY VERIFYING RECEPTION. EXAMPLE No. 2 - PROGRAM 156.8MHz (IMAGE FREQUENCY OF 135.2MHz = 135.2+21.6) INTO SCANNER BEING TESTED. PROGRAM 146.0 MHz (135.2+10.8MHz) INTO BC 210 (SIGNAL GENERATOR). BOTH SCANNERS SHOULD LOCK-IN TO VERIFY RECEPTION. NOTE - IMAGES ARE BASED UPON THE SCANNER'S I.F. & MAY VARY FROM 21.4 (10.7 I.F.), 21.6 (10.8 I.F.), OR 21.7 (10.85 I.F.).

VHF Marine

Send information, articles, frequencies and their use, and questions that relate to private, commercial, and Coast Guard VHF maritime and inland waterways radio communications to:

AT LAST! We have an editor for the VHF Marine column. Emmett L. Baxter, Jr.'s first column will appear next month. In the meantime, you may send any material you are holding to him c/o Bender's Custom Services, Inc., 424 W. 22nd St., Norfolk, Virginia 23517.

This column is for the exchange of space communications systems (manned or unmanned), frequency information, orbital data, hobby receiving equipment and antennas. Questions and column input pertaining to Space Communications Monitoring should be sent to:

Larry Van Horn (TN-014),1111 N. Carrier Pkwy., B-107, Grand Prairie, Texas 75050.

Welcome to the October Space Comm and a very busy month for your editor. Appearing elsewhere in this month's bulletin is my first attempt at a Communication Profile. In our regular column this month, in honor of STS-5, I will feature a STS-5 mission profile, STS-5 payload profiles, amateur radio shuttle communications opportunities as well as late breaking space news items. So much for the countdown, now on with the mission.....

STS-5 Mission Profile

Speaking of mission, Space Shuttle Mission 5 is set for a November 11 launch from the Cape, closing the STS development phase and introducing the Shuttle program operational phase. STS-5 will carry the first four man crew consisting of: Mission commander- Vance D. Brand, Mission Pilot- Marine Corps Colonel Robert Overmyer, Mission Specialist- William B. Lenoir and Joseph P. Allen.
STS-5 will feature the first shuttle launch of a commercial satellite payload. Telesat Canada's, Telesat-E, which will become ANIK 5 in orbit and Satellite Business System's SBS-C are the two commercial satellites for this mission. Telesat-E and SBS-C are both Hughes Aircraft products and are of the HS 376 spacecraft design. Both satellites will use the Boeing IUS upper stage to climb into geostationary orbit once released from the Shuttle Columbia. Telesat-E will be parked at 112.5 degrees along the equator and serve Canada's audio, video and data telecommunications needs. SBS-C will transfer to the 100 degree orbital slot where it will serve the continental US business concerns renting it's space voice, teleconferencing, computer-to-computer communications, and electronic mail capabilities. A satellite profile will appear at the end of the column for each satellite.
Mission specialist Lenoir and Allen will conduct the first Space Shuttle EVA(Extra Vehicular Activity) during STS-5. NASA said the two astronauts could spent as much as 7 hours in the payload bay during the EVA. Lenoir and Allen will conduct experiments on the shuttle payload doors and verify some Solar Maximum Mission repair techniques.
All in all Mission 5 will probably be one of the most exciting to date and will afford anyone equipped with UHF listening gear and in range during the EVA program with some unique listening opportunities,

Ham Shuttle Communications

I have received from several individuals tips on different ways to monitor shuttle communications without using a UHF/S/C/Ku-band receiving setup. One of the more interesting ways is through the amateur radio repeaters in Southern California as M. Elmitt Eastcott reports in the following article on the JPL amateur radio repeaters.

from M. ELMITT EASTCOTT

Southern California "Hams" and those of us who sit at home monitoring scanners are undoubtedly the most fortunate users in the country when Space Shuttle Columbia is on a mission. Thanks to the expertise and generosity of the JPL Amateur Radio Club W6VIO (Jet Propulsion Lab., Pasadena), operated by Jim Lumsden, Jack Patzold, Walt Diem, Stan Sander, and many others, all voice communications between Houston Control Center

and the Astronauts in Columbia are available to us on VHF and UHF.

I have listened to and tape-recorded STS-2, STS-3 and STS-4 (Space Transportation System). Coverage began early each morning Los Angeles time when the astronauts arose, and lasted until early in the evening when they went to bed. The third mission, which landed a day late and at a base never before used for a space mission, was especially fascinating. For example, those listening at one particular moment heard NASA'S decision to go "one more day" even before the astronauts were told, as they were in a period of LOS (Loss of Signal).

The actual mechanics of those VHF/UHF transmissions aren't too complicated as modern communications go, but they were involved. The shuttle audio was downlinked to a network of ground stations around the world, and sent to NASA at Goddard Space Flight Center, Maryland. From there they were mostly land-lined through NASCOMNET to various NASA centers, such as JPL.

JPL then transmitted the combined audio (Houston and Columbia) on their La Canada transmitter W6VIO on 224.04 Mhz as a user controlled service to the amateur community. (Hams having 220 Mhz transceivers received the audio direct from JPL at this point). Most users, however, received the audio from repeaters re-transmitting the 224.04 signal, on such frequencies as 145.6, 145.46, 146.75 and UHF at 446.775 and 447.775. Some of these repeaters covered afternoon and early evening only, while 145.6, for example, covered the entire transmissions period. The operators of these repeaters, such as Dick LaBelle and John Russell and others, spent 14 hours or more a day seeing that the final product remained as near perfect as possible. They, along with JPL, are to be highly commended for their contribution.

Reaction to these transmissions was nothing less than spectacular. After shuttle 2 landed, for example, I listened to a repeater for two hours with calls coming in a minute or less apart from Hams in their cars, at work, at home, or wherever, extending their thanks and congratulations to JPL, Dick, John, etal.. The response following the landing of shuttles 3 and 4 was equal. Scanner listeners also sent in calls and letters expressing their appreciation.

In talking with Jim Lumsden at JPL recently, he indicated they hope to continue similar transmissions on future missions, assuming NASA'S approval. As one member of the group of thousands with an insatiable appetite for space travel, radio communications, and history in the making, I certainly hope so.

Thanks Elmitt for the excellant article and the recent tape. Those of you within range of the fore mentioned repeaters sure have an advantage over us folks in the sticks, Hi. Congradulations and thanks to all the JPL gang for providing this fine service via their amateur radio repeater.

Jeff E. Howell, KY-023 reports that the Johnson Space Craft Center's amateur radio club, W5RRR retransmits live shuttle communications from Houston on the following amateur radio frequencies:

3.940 MHz
7.265 MHz
14.280 MHz
21.365 MHz
28.600 MHz

More information can be received by writing to the JSC Ham Club, RR1, NASA, Houston, Texas 77058. I tryed in vain during STS-4 to hear W5RRR. Does anyone know

if they were on the air? QST, the ARRL amateur journal, in the June issue reported the above information, so maybe the props between Big D and the Bayou City were lousy. Thanks for the info Jeff.

Other Shuttle Comm Opportunities.

Speaking of the Bayou City, Ed(Houston Chapter) Lentz sent a letter that NASA has put up a repeater that carries live shuttle comms during missions for the media in the area. Anyone with a scanner and within 25 miles of JSC should be able to hear this one on 171.150 MHz. Those of you in the Bayou City might want to give this repeater a try.

During STS-4, AT & T had a call in number so people could hear real-time Shuttle communications. Charges for the call anywhere in the contigous US were 50¢ for the first minute and 35¢ for each additional minute. A total of over 1,025,500 calls were made to the 900 number between 27 June and 4 July in order to hear astronauts Mattingly and Hartsfield communicate with Houston Mission Control. Some NASA personnel believe a lack of US television coverage accounts for the high amount of calls. During STS-5 you might want to listen in yourself. The number is 1-900-410-6272 and remeber you will be billed for the call.

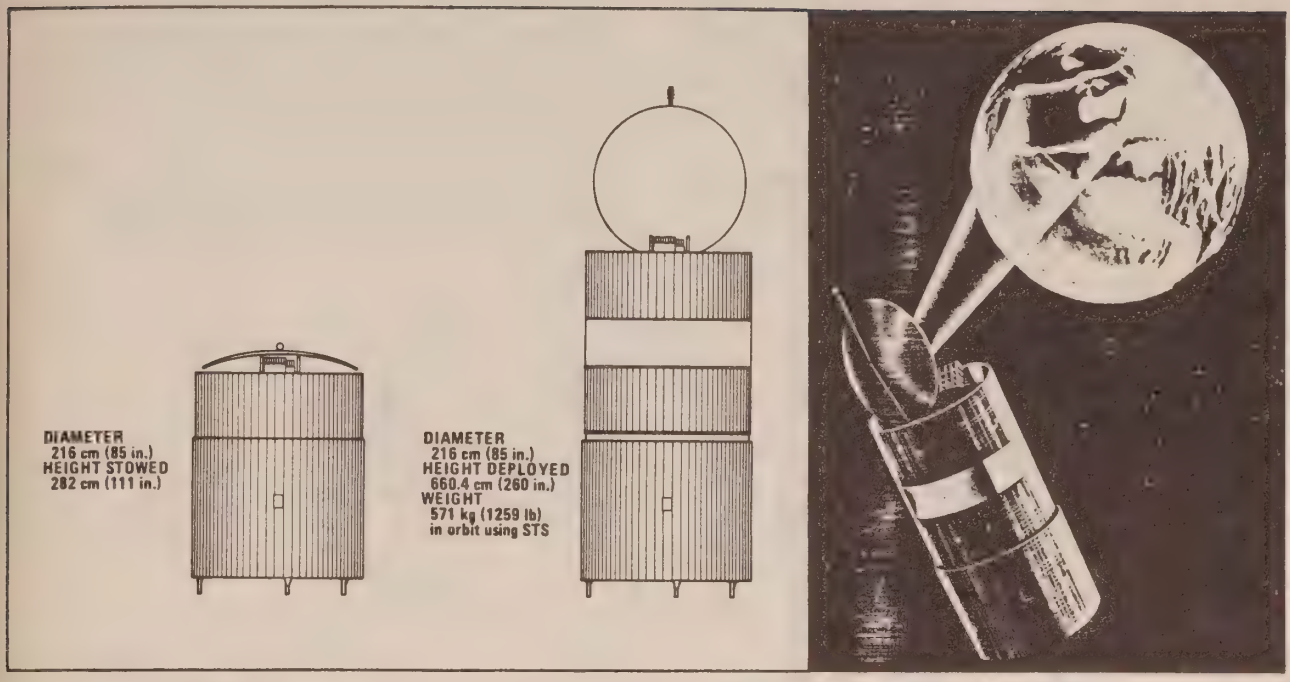
Since the US television media cannot seem to cover Shuttle flights, you might want to try the US Voice of America (VOA) on shortwave for shuttle coverage. During STS-4 when the networks closed down coverage of the landing, I switched on the Panasonic RF-3100 and listened to the VOA coverage which stayed live until after the President's speech.Overseas members might want to listen to the VOA during major Space Shuttle events for live coverage. Hats off to the VOA for their support for us space buffs.

Finally while not exactly space comms, NASA has an extensive HF net as backup to other primary circuits. There are circuits for the tracking network,SRB recovery network, countdown/launch networks, etc. Numerous articles in Monitoring Times, and Speedx have appeared recently, so check these fine publications for the latest up-to-date information.

Your editor would like to acknowledge the kind assistance of Mr. W.F.Green from the Rockwell International, public affairs dept. for his assistance with the Communications Profile on the Space Shuttle Communications System. Also the PA office of Hughes Aircraft has been invaluable in preparing this month's column and future Space Comm Columns. Many thanks to Elmitt Eastcott, Jeff Howell, Ed Lentz and Fred Varian for their time, assistance, and information for this month's column.

Next Month and beyond....

Next Month I'll be back on track with our beginners series of articles, In future columns as mission information and payload profiles are released, I will keep you the reader updated on what is going up on the Shuttle missions.Also if you enjoyed the Comm Profile on the Space Shuttle Comm System drop me a line or two and let ye ed know and I will work up some in the future along the same lines. Remeber this is your column so let me know what you want to see. Per my September column if you are interested in the Russian Space program and would like to exchange tips.tapes, notes and observations/loggings drop ye editor a letter, cassette or what have you and we'll exchange info. If enough interest is there than I might start a monthly logging feature on the Russian intercepts. If you have anything of interest or would just like to swap a few lies give me a call betweem 7 PM-10PM CST (no collect calls) at 1-214-642-8407. Now here is STS-5's payloads profiles courtesy of Hughes Aircraft. Till next month 73's and good monitoring to all.



SBS

SBS BUSINESS SATELLITE SERVICES TO UNITED STATES CUSTOMERS

In March 1981, SBS-1, the first Satellite Business Systems all digital 12/14 GHz satellite, began delivering voice, teleconferencing, computer-to-computer communications, and electronic mail and document distribution services to corporate customers via private intracompany networks.

Hughes Aircraft Company's Space and Communications Group built three satellites for the system, the first of which was launched into geosynchronous orbit 22,300 miles over the equator on November 15, 1980. The second is scheduled for launch in 1981, and the third in late 1982. SBS-1 occupies an orbital position at 100°W longitude.

Satellite Business Systems is a private company jointly owned by IBM Corporation, Comsat General Corporation, and Aetna Life & Casualty Company. It was formed to own and operate the first 12/14 GHz (K band) satellite business communications system in the United States. Among the service's benefits are long-distance telephone cost savings of up to 30 percent over conventional long line costs.

The system includes small RF ground terminals, of which Hughes is building 100. The terminals are equipped with a 5.5 or 7.7 meter antenna and are designed to be mounted on the rooftops of customer facilities or on the ground adjacent to them.

The SBS satellites are the first of Hughes' newest series of communications satellites, designated HS 376. Following a principle pioneered by Hughes nearly 20 years ago and used in numerous communications and scientific spacecraft, the HS 376 is spin stabilized.

The spacecraft has two concentric cylindrical solar panels, the outer of which extends in space to approximately double the solar generating capacity of earlier models. Improved solar cells generating 20 mW/cm^2 are used. Two nickel cadmium batteries furnish power during solar eclipse. Design mission of each satellite in the SBS series is seven years.

In addition to a telescoping solar panel, the spacecraft carry an antenna which is folded down at launch and deployed in space. These features enable the spacecraft to be configured for launch from a Delta expendable rocket or from the Space Shuttle. The first SBS was launched from a Delta 3910. A Delta rocket will also be used for the second launch and a Space Shuttle launch is scheduled for the third. In its stowed position the satellite can be carried upright in the Space Shuttle cargo bay. This design minimizes the use of linear space and, because Shuttle launch costs are based partly on utilization of linear space, significantly reduces those costs.

The spacecraft are 85 inches (216 cm) in diameter. In their stowed configuration they are 111 inches (282 cm) in height. With solar panels and antennas extended, the spacecraft are 260 inches (660 cm), or more than two stories, in height.

The spacecraft weigh approximately 1259 pounds (571 kg) in orbit, including 204 pounds (97 kg) of propellant used to keep them on station and properly aligned with the earth. On-orbit stationkeeping and attitude control are provided by four thrusters delivering 5 pounds (25.6 Newtons) of thrust each.

SBS satellite beams cover the continental United States, with higher gains focused on the eastern portion and western edge of the country. A 72 inch (183 cm) reflector creates the beam. It has two polarization selective surfaces. The front surface is RF-transparent to vertically polarized beams bounced off the rear reflector. The reflectors are offset from each other with corresponding offset of the focal planes, with separate feed arrays for transmit and receive. The feed arrays do not physically interfere with each other.

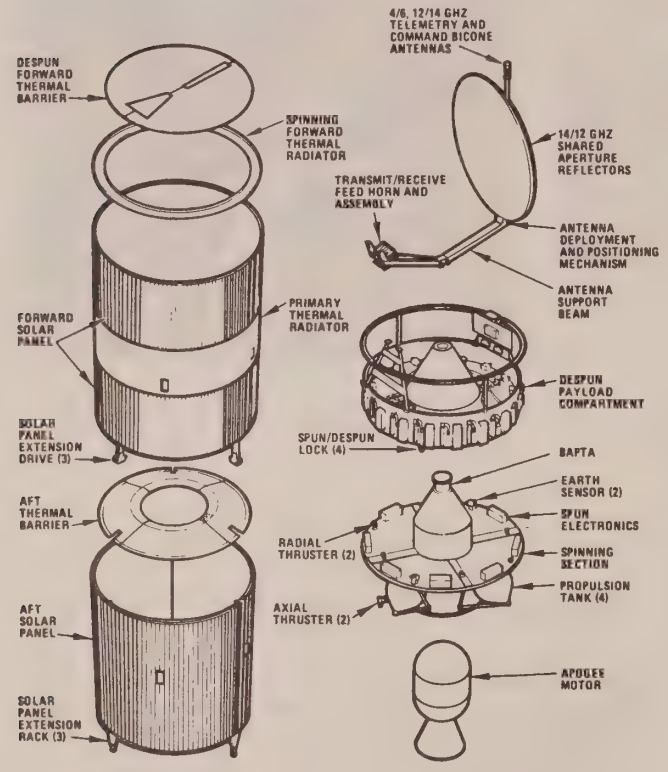
The satellites have 10 channels each. Each is 43 MHz wide. The channels use 20 watt multicollector traveling wave tubes.

Signal strength exceeds 43.7 dBW in the primary eastern coverage zone. With low noise solid state FET microwave integrated circuit techniques used in the redundant receivers, weighted beam receive sensitivities range from G/T + 2.0 to −2.5 dB/K over the most densely populated regions of the United States. The satellites operate in a time division multiple access (TDMA) mode.

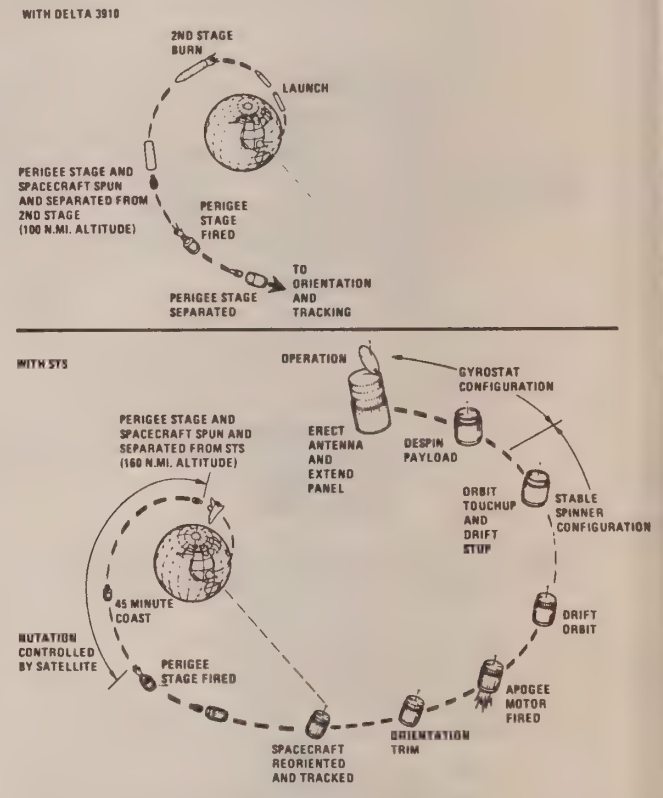
Each of the satellites has capacity for 12,500 two-way phone calls or 10 color TV transmissions simultaneously. Data bit rate is 480 megabits per second.

The SBS satellites use a payload assist module (PAM) which is attached to the spacecraft and performs the conventional third stage rocket function when launched on a Delta booster. Its purpose is to insert the satellite into its elliptic transfer orbit. This same stage, with some design modifications, is called a spinning solid upper stage (SSUS) and is used when the spacecraft is launched from the Space Shuttle.

The apogee motor, used to place the satellites into near geosynchronous orbit, is a Thiokol Corporation Star 30 solid propellant rocket and is used on all HS 376 spacecraft.



Spacecraft exploded view



Launch sequences

ANIK C

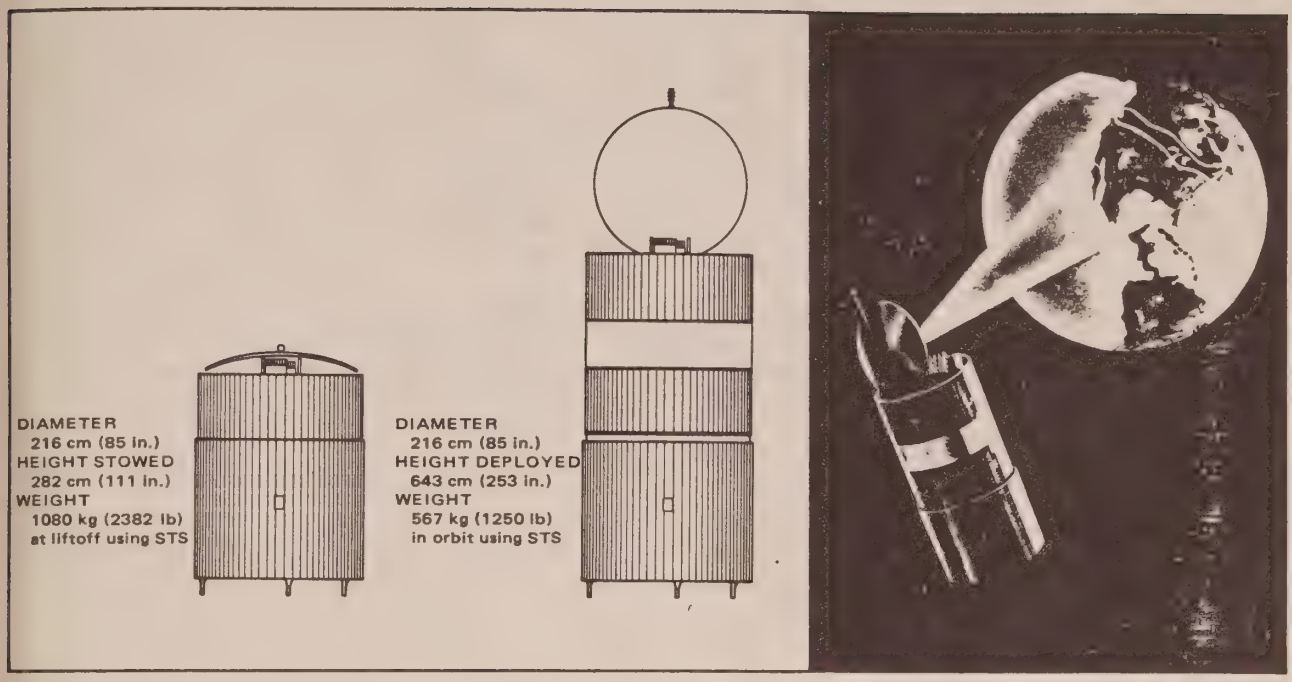
The Anik C will introduce new technology to commercial satellites. It will be Canada's first totally dedicated commercial telecommunications satellite to use the 12/14 GHz K band frequencies, allowing a 100 percent increase in telecommunications capacity over the first Anik, and it will employ a new telescoping solar panel that will almost triple the power for spin stabilized Anik satellites.

In April 1978, Telesat Canada signed a contract with Hughes Aircraft Company to build three new telecommunications satellites for service within Canada's rapidly expanding telecommunications network. The Anik C satellite will serve Canada with audio, video and data telecommunications services.

The satellites are designed to be launched on either NASA's Space Transportation System (STS) or a 3910 Delta booster, beginning in the first quarter of 1981. Using a folding antenna reflector and deployable solar panel, the compact satellite will be able to sit upright in the Shuttle bay. This configuration will save Shuttle users the charges which are proportional to the payload length used. After the satellite is separated from the Shuttle, the antenna can be erected and the outer section of the telescoping solar panel-deployed.

The telescoping solar panel is a new design to keep the satellite compact for launch and yet be able in orbit to deliver about triple the output power of former designs. The telescoping feature incorporates two concentric solar panels that are positioned one inside the other for launch. After spacecraft separation from the launch vehicle, the outer deployable panel is extended downward to reveal the inner solar panel which surrounds the spacecraft body. In the deployed configuration the inner and outer panels generate over 900 watts of power for the satellite.

The capability for using 12/14 GHz frequencies permits the antenna size to remain about the same as on previous Anik satellites and yet be capable of producing narrow beams necessary for the high radiated power. The satellite will focus four transmit beams to provide regional coverage of Canada.



The transmit and receive beams will be created by a 183 cm (72 inch) reflector with two reflecting surfaces. One surface is sensitive to vertical polarization and the other to horizontal. Separate microwave feed networks are used for the different polarizations.

The communications repeaters use 15 watt, multicollector traveling-wave tubes in each of the 16 channels. With the high gain developed by the antenna, a transmit signal strength of 48 dBw is provided in the primary coverage zones.

The satellite will be spin stabilized with a despun antenna and electronics platform. Spin stabilization was selected by Hughes because of the successful orbital experience with this design. Beginning with the Syncoms in 1963; then the Intelsats; Applications Technology Satellites 1 and 3; TACSAT; national systems for Canada (Anik A series), the United States and Indonesia; Marisat; and the Geostationary Meteorological Satellite — over 30 examples of the Hughes spin stabilized design have been successfully launched to date.

The spacecraft is 216 cm (85 inches) in diameter and 643 cm (253 inches) high with the solar panel and antenna deployed. The spacecraft weight is 1080 kg (2382 pounds) following injection into the elliptical transfer orbit.

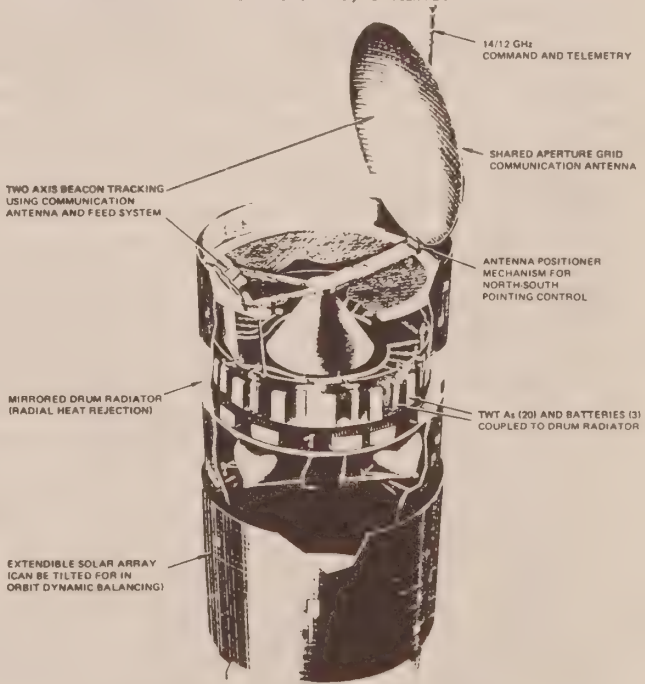
After the apogee engine fires, the on-station weight of the satellite is 567 kg (1250 pounds), of which 100 kg (220 pounds) is in-orbit propellant. Design life of each satellite in orbit is 10 years. On-orbit station keeping and attitude control are provided by four Hughes 5 pound thrusters.

The two operating spacecraft will be located within the range of 105° and 120°W longitude over the equator. The third spacecraft will be kept in storage as a spare.

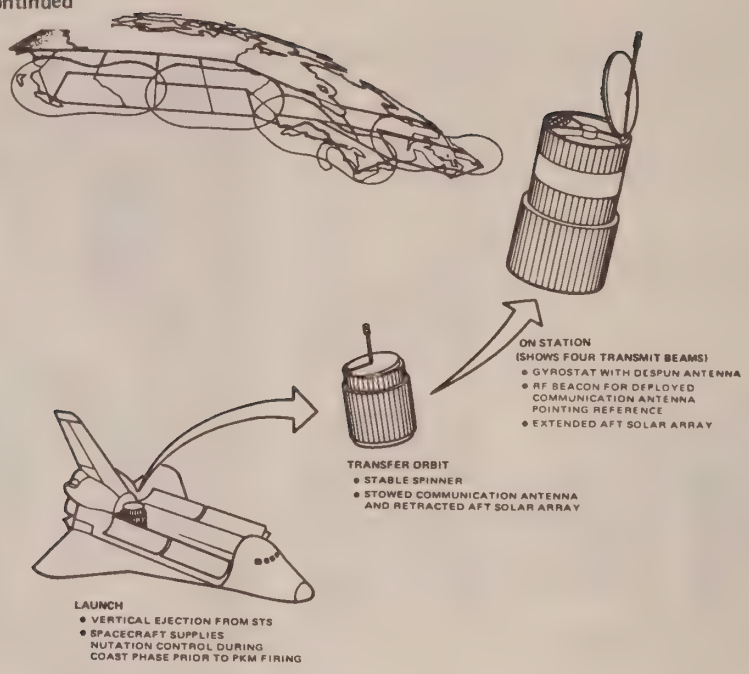
SUBCONTRACTS

The apogee engine is a modified Thiokol Star 30 solid propellant rocket.

A significant portion of the design, manufacture and testing of the three Anik C spacecraft will be done in Canada. Spar Aerospace Ltd. of Toronto, Ottawa and Montreal will be the principal subcontrator. Other Canadian subcontractors include SED Systems Ltd. of Saskatoon, Saskatchewan, COM DEV Ltd. of Montreal, Quebec, and Fleet Industries of Fort Erie, Ontario.



SPACECRAFT DESIGN HIGHLIGHTS


ON STATION
(SHOWS FOUR TRANSMIT BEAMS)
• GYROSTAT WITH DESPUN ANTENNA
• RF BEACON FOR DEPLOYED COMMUNICATION ANTENNA POINTING REFERENCE
• EXTENDED AFT SOLAR ARRAY
TRANSFER ORBIT
• STABLE SPINNER
• STOWED COMMUNICATION ANTENNA AND RETRACTED AFT SOLAR ARRAY
LAUNCH
• VERTICAL EJECTION FROM STS
• SPACECRAFT SUPPLIES NUTATION CONTROL DURING COAST PHASE PRIOR TO PKM FIRING

MISSION SCENARIO

Special Feature: Soviet Radio Communications

Excerpts from "In the World of Radio Waves and Messages" by N. Nikol'skiy, originally published in Automatika, Telemekhanika i Svyaz' (January 1982) in Russian. Translation in Worldwide Report--Telecommunications Policy Research & Development #208. Edited by Robert Horvitz (CT-048):

...For the Soviet Union, which occupies one-sixth of the earth's surface, the requirement for organizing communications covering such a large territory required that the Unified Automated Communications System YeASS be created. This radio electronic complex is already partially in place, and is being developed and improved in consideration of the requirements of all branches of the economy. The Unified System is being used to transmit various types of information: telephony, telegraphy, digital, facsimile; it supports radio communications and data transmission, and the dissemination of radio broadcast and television programs. The Unified System includes satellite, radio relay, cable and troposcatter communications links, and will include optical links in the future.

...The Molniya-3 satellites, which operate in the centimeter band, have been in operation for about 7 years. The Raduga and Gorizont centimeter-band multi-trunk relays have been operating in geostationary orbit for a slightly shorter period. These satellites are used for telephone and telegraph communications, for transmitting central television programs and newspaper columns throughout this country. The Orbita-2 satellite earth station network provides good reception and transmission quality... There are now 87 Orbita earth stations, about 1000 Ekran transceiving stations and 10 of Moskva stations. Thanks to satellite communications systems, more than 86% of our population can receive the first Central Television Program, and 90% of Pravda subscribers receive their paper the day it is published...

The fruitful cooperation of specialists from the USSR, the US, Canada and France within the framework of the corresponding agreement was reflected in the creation of an experimental satellite search and rescue system for vessels and aircraft in trouble. The sarsat-ARB emergency radio buoy...is designed to determine the location of a platform in distress via a satellite-channel radio beacon (ARB-406) and a close-range radio beacon (ARB-121) which guides the search and rescue facilities to the

platform. The nominal operating frequency of the ARB-406 is 406.025 MHz, while that of the ARB-121 is 121.5 MHz. The devices can operate uninterruptedly for 28 and 48 hours, and consume power of 0.15 and 1.0 W, respectively.

The Unified Automated Communications System of the Soviet Union makes successful use /of/ radio relay equipment. Different stations are used on backbone and intrazonal radio relay links. The radio relay systems used include the Elektronika-svyaz'-2 which operates in the 1.7-2.1 GHz range. This system can accommodate 720 telephone channels or color television programs with audio accompaniment. The digital Elektronika-svyaz'-500 radio relay station operates in the same range in inaccessible parts of the country. An autonomous power supply system can operate unattended continuously for at least 3 years. Each section is 200 km long with an average repeater interval of 25 km. The data rate is 2048 or 8448 kbps; the station weights 10 kg...

The Malyutka radio relay station is designed for arranging local stationary or temporary links up to 300 or 400 km long along construction routes and gas or oil pipelines, as well as for local communications links. This system provides the capability of connecting and switching 3 automatic telephone exchange trunks, 5 central blocking lines, 2 long-distance telephone lines, and 2 base radios; it can also be used for selective public-address communication and selective party calling. The frequency subbands occupied by the system are 150.5-151.7 and 155.5-166.7 MHz.

The Radan-II relay transceiver is used to organize a bundle of trunk lines between rural automatic exchanges. This is a PCM/FM system operating in the 10.7-11.7 MHz band... the Purga-2 100 kW shortwave single-sideband transmitter...is designed for mainline communications on Unified System links, long-range communications with foreign countries and long-range relay of broadcast programs. The Purga-2 operates in the 5-30 MHz band.

The continuous increase in the amount of mobile radio equipment (the number of such sets in the world approximately doubles every 4 or 5 years) requires continuous improvement of the systems into which it is organized, proper frequency allocation, and improvement of equipment parameters from the viewpoint of electromagnetic compatibility.

Radio equipment was exhibited extensively [at the Svyaz'-81 show in Moscow] for widely varying branches of the national economy. This included the Viola system of ultrashort wave radios operating in the 148-149 and 172-173 MHz bands which are used for fixed-frequency simplex radio telephone and signaling with an operating radius of up to 20 or 30 kilometers. The Yadro-2 airborne shortwave radio is among the best of the modern aviation radio communications equipment. This radio is designed with hybrid and integrated microcircuits, and uses an analog/digital synthesis method for producing the frequency spectrum. The radio operates in the 2-30 MHz band; the standard output power is 400 W, with MTBF of 1200 hours.

Maritime communications facilities comprised a significant display. These included the Tsikloida and Sibir' receivers for vessels in the merchant, fishing and river fleets; as well as the Signal, which is used for audible and automatic reception of emergency signals and navigational warnings...

The Kolos fixed-frequency system provides duplex telephone communications without tuning over moderately rough rural terrain. This system operates in the 307-308 and 343-344 MHz bands. The Kolos multichannel system is now being used in 25 different dispatcher services.

...The radios in the Transport system support duplex and simplex radio communications, permanent and temporary radio communications, radio communications with random-access channels at large rail junctions, automatic access to the railroad automatic exchange, relay communications, communications in tunnels, etc. The equipment in this system is based on standardized modules: transceivers, power supplies, portable and stationary control panels, and portable radio transceivers... The Transport system consists of 3 subsystems: a train subsystem, station subsystem and repair-operational subsystem. The train subsystem supports communications between the dispatcher and locomotive engineers, between engineers aboard oncoming and following trains, and individuals involved with train operation... The station subsystem supports communications between rail station dispatchers and individuals involved in technological processing of trains, and the engineers of the switching and hump locomotives... The repair-operational sybsystem is used for communications between workers in repair subdivisions and road maintenance machines with repair service dispatchers. These [RV-2 and RV-3] radios use a single-crystal frequency synthesizer with frequency modulation, and a power amplifier based on a phase-locked

loop voltage-controlled oscillator. The working frequencies of the radio are formed with the help of a frequency synthesizer. Frequency stability is achieved by a temperature-compensated crystal reference oscillator. The working channels are selected and switched with the help of a special-purpose microcontroller. The RV-2 and RV-3 radios are fourth-generation devices which use microcircuits and increased-density hybrid microassemblies... The standardized transceiver provides the basis for all portable and stationary radios in the Transport system for both the 160 and 330 MHz bands.

The RN-1 radio [used in the Transport system] also uses microassemblies with caseless components, transistors and integrated microcircuits. This radio can operate continuously for over 8 hours with a standby reception-receive-transmit ratio of 8:1:1. A maximum of 6 channels is provided, and the system operates in the 151-156 MHz band.

Modern television and radio broadcast technology has been created in this country. The television transmitting network includes more than 450 high-power stations and 3,000 low-power relays. Radio programming is broadcast in 137 national languages of the USSR and foreign countries for a total of 1318 hours per day, including central radio broadcasting for 384 hous per day

Color television technology is developing rapidly. During the last 5-year plan, a third-generation system of standard color television transmitting equipment was developed and put into production. This equipment makes extensive use of integrated circuits. The equipment has stable technical parameters, good performance indicators, high reliability and operating convenience. The new equipment makes it possible to expand the creating and technical capabilities of television center personnel significantly...

The "Svyaz'-81" international show held under the banner "Communications Facilities in the Service of Society and Man" enriched the participants with new ideas, provided an impulse for the creative energy of engineers and scientists, and opened up new possibilities for human intelligence. This show will serve all of the peoples of the earth in the fight for peace and progress.

NEW MEMBERS LIST

No new members listing this month.

NEWS

The R.C.M.A. Board is taking this opportunity to answer the many letters of inquiry we have had on the following topics.

MEMBERSHIP CARDS AND BADGES

The R.C.M.A. has no badges, decals, or membership cards for sale or distribution. The label on your newsletter is your membership card. Other clubs may have several gimmics or commercial good deals. Our good deal is the newsletter, which you as members get to write.

MEMBERSHIP RENEWAL DATE

The date printed by your membership number on your label shows the last month of your current membership. You should renew by this date to insure continuous reception of the newsletter.

Several misunderstandings have occurred due to the fact the newsletter we mail this month is carrying a cover date of next month. The advanced date is used to allow USPS to deliver your newsletter to you on time. Your letter is mailed approximately four days after the monthly board meetings.

PRORATED MEMBERSHIPS

To save postage and other complications, if your original membership application was not accompanied by the correct amount. You received a prorated membership label of less than 12 months. Please do not send in the extra amount to finish the year, just renew when your prorated date comes up.

SPECIAL FREQUENCY REQUESTS

Contact your local R.C.M.A. group for frequencies in your area or use the contact column of the newsletter. We are not yet set up for a national distribution of frequencies. We have discussed this possibility, but the current logistics of the newsletter has stopped us. Ultimately the big picture would include copies of the F.C.C. and I.R.A.C. data bases, a fast computer, and software to select and sort in any order. e.g. Frequencies along route 66 from Chicago to Tulsa in order of the cities passed. Should anyone want to bluesky on this announce your intentions in the Contact Column. We will get there. The Auto Club can plan a road trip, we should be able to give you a frequency map someday....

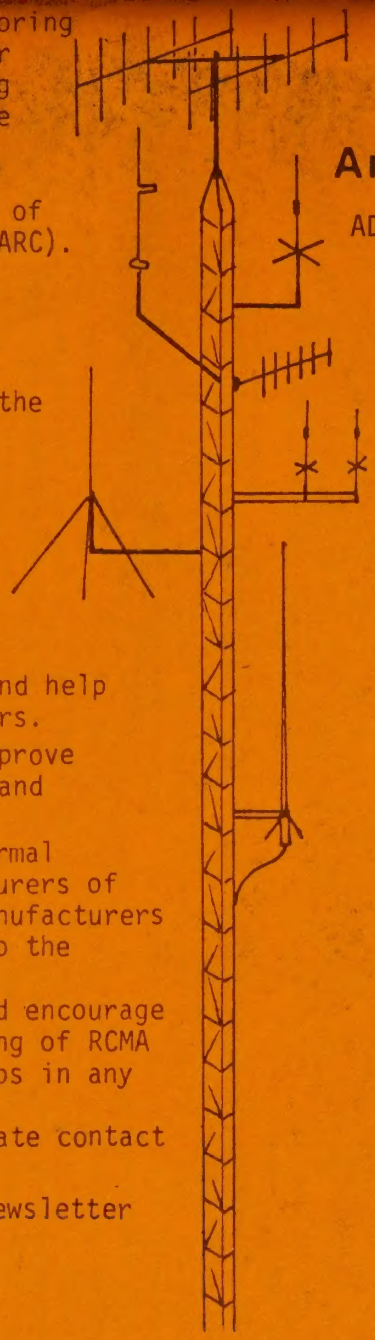
MATERIAL FOR EDITORS

Please send frequency reports and comments directly to the appropriate editor. Until we get the big data base system, the use of a central distribution P.O. Box for everything has lots of delays.

The Radio Communications Monitoring Association is a radio club for persons interested in listening to two-way communications above 30 MHz as a hobby. RCMA was founded in May 1975 and is a Full Member of the Association of North American Radio Clubs (ANARC).

The goals of RCMA are:

1) To provide a fraternity for those who seriously pursue the hobby of monitor radio listening.
2) To try to be knowledgeable about two-way radio systems and operations.
3) To promote an understanding of the legal and ethical uses of monitor receivers.
4) To share information with and help other monitor radio listeners.
5) To try to understand and improve receivers, antenna systems and related equipment.
6) To offer suggestions and formal recommendations to manufacturers of monitor receivers and to manufacturers of other products related to the hobby.
7) To offer suggestions for and encourage the organizing and conducting of RCMA meetings and tours for groups in any geographic area.
8) To encourage and to facilitate contact between members.
9) To publish a regular club newsletter devoted to the hobby.



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